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# THE NORTH DAKOTA FARMER



50 Cents A Year

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Vol. 18, No. 2

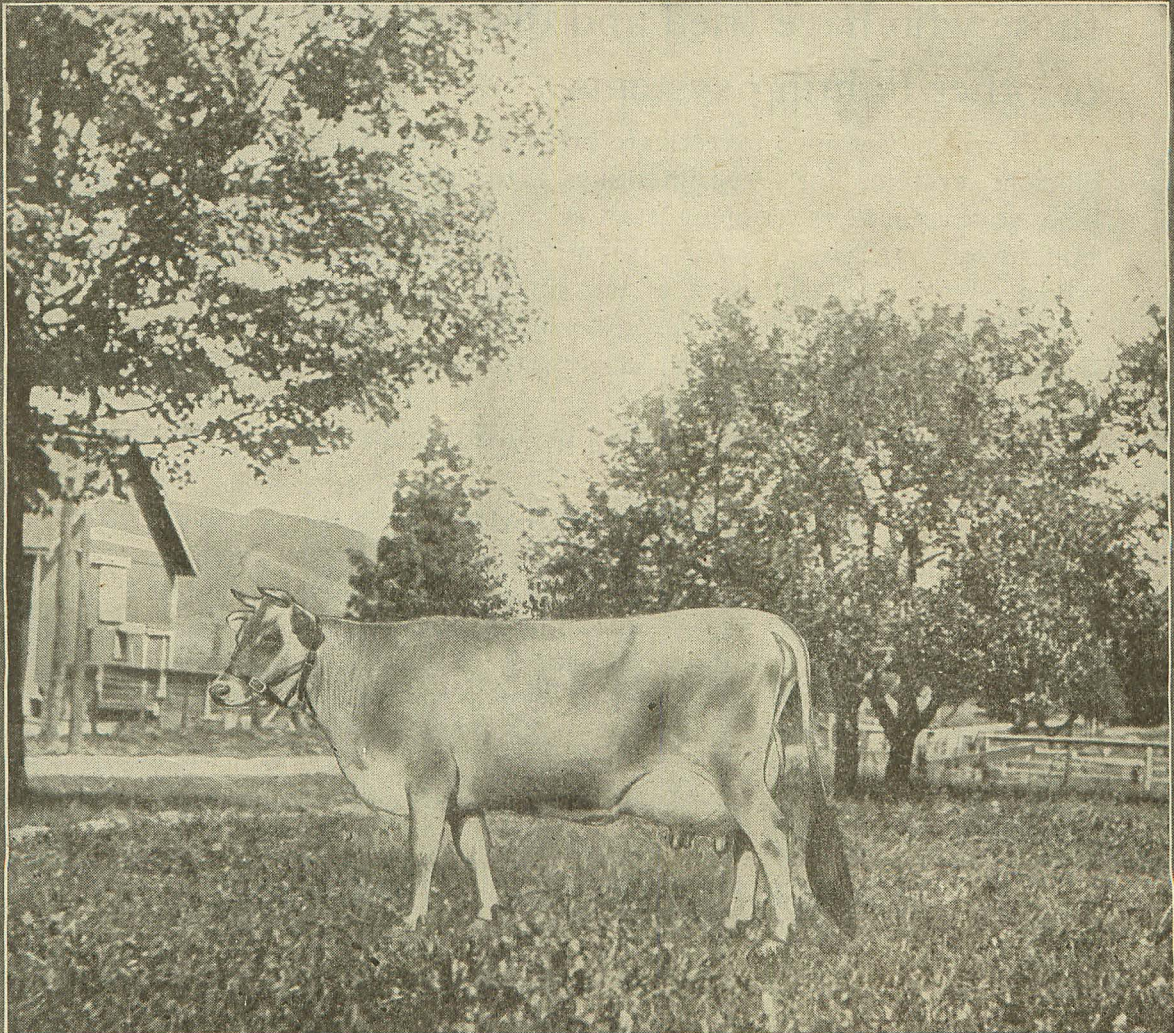
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August 15, 1916

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It will pay you to investigate our system and install at the outset an efficient system, for experimenting with electric plants costs money. The government experiment station at Fargo has published an entire bulletin on our wind electric system; the Country Gentleman devoted a whole page to a description of our method of harnessing the wind; the Good Housekeeping Magazine endorsed our system; Dr. Harvey Wiley devoted an entire newspaper page to the advantages of our wonderful invention and its possibilities. Bear in mind that every one of these glowing tributes was unsolicited by us and therefore speaks volumes for the system.

### OTHER SPECIALTIES

While our attention is given mainly to the Wind Electric System, we also manufacture Artesian Well Drive Electric Plants; Gasoline Engine Municipal Electric Light Plants; Automobile Trailers, Automobile Switching Systems; Paulson Shock Bucker and Carrier, which displaces six men and six teams in the threshing field.

**NOTE THIS:** You should place your order early. So great is the demand that you may be disappointed if you delay.

## WIND ELECTRIC COMPANY

Wyndmere

North Dakota



# THE NORTH DAKOTA FARMER

Vol. 18 No. 2

LISBON and FARGO, N. D., AUGUST 15, 1916

50 Cents a Year

## Let Us Reason Together

### WAKE UP

**T**HE writer once had occasion to cross East River, New York, when the fog was so dense that utter darkness prevailed. It was eight o'clock in the morning, yet one could not discern an object a dozen feet away. The river was filled with every sort of craft and recognizing the importance of "safety first," those propelled by steam made their immediate presence known by sending out at frequent intervals, whatever note of warning their steam whistles were attuned to. Some blasts were sharp, shrill and clear, others of deeper tone and so on down to the blood-curdling siren of the great steamer that was feeling its way thru the dense fog and made its presence known that collision with other craft might be avoided. In fact, all these noises were intended for that purpose.

Taken all together the conditions created an uncanny frame of mind. Danger lurked all around. Voices out of the "deep," some near-by, but from invisible sources, naturally caused a creepy sensation to explore one's spinal region. Every blast from steam-propelled craft, whether clear and shrill or deepest bass, was a warning. The curtain of fog hid the vessel but not her wail.

In a sense we are all crossing the East river of life—in a fog. Our vision is not always clear. We see things darkly. Voices come to us out of the darkness—from invisible sources, as it were—and we realize that there are others crossing the same stream.

The voices differ greatly. Some are cutting, blistering, withering, owing to the temperament of the speaker. Others are better modulated, even bear the tone of supplication, while not a few are attuned to deepest lamentation, or scorn or blasphemy. Not all are cheerful.

But the river must be crossed and while listening to the babel of voices around you, what are **you** saying? What voice are you sending out into the mists that seem to envelop everybody?

Does it contain aught of hypocrisy? Is the art of language ever used to conceal the real purpose?

In chasing the almighty dollar the clear tones of Truth are seldom heard. In fact, it is claimed that a business man that tells the truth, all the truth and nothing but the truth will make a financial failure, every time.

The truthfulness of this claim may

run?

Why do we hear such expressions as "dirty politics"? There can be but one answer; because decent people who are always in the majority permit a small but disreputable minority of political shysters to manage our political affairs. This is not necessary. Government is too sacred to be neglected on account of business or bad weather when honest, thoughtful votes are required to elect patriotic men to office, and on a platform, too, that guarantees a "square deal" to every citizen.

Personal selfishness or personal greed has no legitimate place in the people's government. Moreover, the motives of the office seeker may well be carefully scrutinized. Why is he seeking office? His standing as a citizen and his record as a man should afford the best answer.

The truly patriotic man; the man whose life, character and demonstrated ability peculiarly fits him for public service will generally be sought by the office he is best qualified to fill, and with such men in office political "rings" and "machines" will never be in-

cubated.

The present uprising among the farmers of this commonwealth indicates a spirit of unrest, of discontent. Farmers are not satisfied with the kind of government for which they are themselves responsible, since without their votes no man can be elected to office. They realize that the margin between what the producer gets and the consumer pays is too great; that somebody is getting more than his services justify.

The relation between economic justice and the people's government, however, is not clear to many. The real remedy is not as clear as it should be. The fog still hangs heavily over the river and many and diverse are the voices that come thru the mists, each warning the other to avoid

### ENVY

**"Everything contains within itself**

**The seeds and sources of its own corruption;**

**The cankering rust corrodes the brightest steel;**

**The moth frets out your garment, and the worm**

**Eats its slow way into the solid oak;**

**But envy, of all evil things the worst,**

**The same today, tomorrow, and forever,**

**Saps and consumes the heart in which it works."**

be questioned. However, it cannot be denied but that business lying is mighty common. Deception has been developed into one of the finest of the fine arts. We have come to believe in the necessity of lying when the truth hurts, but more especially when something may be gained thereby.

Doesn't it strike you, Farmer friend, that we should wake up? That we should popularize the truth by precept and example and compel the other fellow also, not only to recognize, but practice it?

In politics as well as in business the naked truth should have right of way.

To gain votes for our particular party by deceit, by falsehood and misrepresentation may seem appropriate—in fact, such methods are almost universal—but does it pay in the long



collision.

Amid this babel and confusion of selfish and often dishonest panaceas the farmer must use his own gray matter and take care of his own craft.

The farmer is the only one that is in position to be preyed upon. Others have what they get out of him. He must look out for himself. He must wake up.

He is waking up.

### RURAL ENTERTAINMENTS

The rural communities and smaller villages of the state are entitled to a reasonable amount of entertainment; yet their facilities for such diversions are comparatively limited. The Agricultural College is doing what it can toward supplying this need, both by offering a traveling lyceum lecture course and by offering facilities for Agricultural College students to become somewhat efficient in organizing plays, debates and other forms of community entertainment, from local talent. By these means without much expense the isolated rural community—and there will be many such communities until our vacant lands are more fully occupied—will be able to furnish its own amusements by making use of local talent.

While there are those who object to this form of "frivolity" on the part of students, the objection comes mainly from those who neither comprehend the fact that agricultural education should prepare for whatever service may be needed in the country or who have never experienced the monotony of the long winter months for those living on the bleak prairie with nothing to break the daily round of home duties.

Moreover, if the Agricultural College is commissioned to improve and make rural life really desirable, it must endeavor to meet all rural needs—amusement as well as increased production of crops. We must not lose sight of the fact that in many respects country boys and girls do not differ materially in their social desires from their city cousins.

Since we require students to study algebra, ancient history and some foreign languages for the beneficent influence this form of mental equipment will exert upon rural life, why not also at least permit them to acquire equal proficiency in those things that the heart actually craves and that, after all, will give rural life "a place in the sun"?

I am aware that there are those—and good fellows, too—who have no use for anything that youth really desires, or that their own individual

tastes do not recommend. Nevertheless, I for one still entertain a rather vivid recollection of having once been a country boy myself. Naturally, under these circumstances and being so constituted, my views must seem antagonistic to those who never were children with childish desires, or having been such, have forgotten it.

What is life anyhow if not mixed up somewhat with things pleasant and agreeable and calculated to lighten the burden of toil, whether mental or physical toil? And if the College is to fit students for life, then the light as well as the heavy, and the agreeable as well as the sordid, must be taken into account.

Students may thus incidentally be prepared to become social as well as economic leaders in their respective communities, and thru their influence and leadership this acquired, rural conditions may be made as desirable for country people as urban conditions are for city people.

### PLOWING DEEP FOR BIG YIELDS

Why plow at all? What is the reason for tilling the soil? Why, if plowing three inches deep helps, may it help more to plow 13 inches deep, or as deep as one can? asks Joseph E. Wing, a well-known soil expert. Well a soil is a curious thing, he says in an answer to his own questions. It is not a mere anchorage for plants, to hold them from blowing over. It is a laboratory, a place where miracles are worked. A soil is a living thing. It has in it, if it is a good soil, a lot of bacteria. These bacteria perform miracles. They make food for plants. Bacteria, the useful sort, cannot exist without air.

A soil is fertile just in proportion as it is filled with bacteria; that is, one can take a soil and leave one-half of a certain field saturated with water, the pores of the earth closed, as the soil is in a tight, close condition; and put the other half in order by drainage and deep plowing to let in air, and he will get maybe four times the crop from the drained and deeply plowed soil. Drainage and deep plowing should go hand in hand. There is not much use doing either unless the other is done as well.

#### Increases Feeding Depth

That then is the first principle of deep plowing, to let air in so the bacteria flora will be increased. The lower depths of the soil often have much mineral wealth and less nitrogen. Turn these soils up, aerate them, mix humus thru them and the bacteria will get busy and all the soil will

be made rich, all will be made usable.

Plants drink their food, they do not eat. Thus the limiting factor in crop production is soil moisture.

There is not one year in ten in the most rainy states of America when there is enough moisture to afford full crop of corn, cotton, potatoes or almost any other crop. There may be excess of moisture part of the season, then comes a dry time when the plants suffer; it is a critical thing too.

Corn suffers for moisture when it is earing or filling. Potatoes suffer as the tubers swell. Cotton suffers as the bolls set and ripen. No doubt there has been moisture enough already in the season, but it was not held.

#### Retains the Moisture

Deep plowing and well pulverized soil retains moisture better than hard soil. It holds more to begin with and it is more slowly evaporated. So there is a dual advantage from deep plowing. These facts explain why crops are frequently doubled by the factor of correct plowing and preparation of soil.

In France it is customary to plow twice as deep as in America and the crops reaped are more than double what we receive. This is a hungry world. We have a duty, we land owners, to help feed this world. We have a great opportunity. Plow deep. Feed the soil. Drain it first, then it will more truly retain the useful film of moisture that assists in feeding plants.

### MOW WEEDS IN PASTURE

Mowing the weeds in the pasture gives the grass and clover a better chance. It is hard on the weeds too. Set the mower high so as not to cut the pasture plants. When the weeds are allowed to grow they make their growth at the expense of the pasture plants. A few sheep in the cattle pasture will take care of the weeds if not too numerous.

### TREES AND FROST

Trees in many cases protected corn from frost in 1915. Some corn fields in Traill, Grand Forks, Walsh and Pembina counties that were close to trees were protected from frost so that the corn was matured while corn not near trees was frozen. The value of the corn secured from these fields will more than pay for the cost of the trees. More than that the trees made possible securing seed from home grown corn. Had it not been for the trees all the strains of improved seed corn would have been lost in these counties.



# Principles and Profits in Soil Improvements

Dr. Cyril G. Hopkins, University of Illinois

It will be accepted as a self-evident truth that impoverished soil yields no profits, either to agriculture, to industry, or to commerce; and, consequently, that continued prosperity for the masses in America depends primarily upon the maintenance and improvement of the productive power of our farm lands, for agriculture is the basic support of this great nation. Land whose gross return in yearly crop values amounts to only \$4 or \$5 per acre cannot support a system of soil enrichment, except the materials are supplied at the lowest possible cost. It is impossible, as a rule, for the owners of poor land to pay large profits to producers and to transportation companies for those materials which are essential for the improvement of their lands. This is a fundamental truth or principle which ought more generally to be recognized by men of influence. Thus the railroad company that insists upon making profit from hauling ground limestone for use in the improvement of poor, sour land along its line will make soil improvement impossible; whereas, if the expense to the landowner is reduced so that he is enabled to adopt a system of permanent soil enrichment, then both commerce and industry will prosper from the increased business resulting from the greater crops produced.

For men of responsibility to ignore this basic truth can lead only to land ruin and ultimately to commercial and industrial suicide. Shall we not learn a lesson from the mistakes of our older states? The fact that 45 per cent of what was classified in 1880 as improved farm land in New England was found agriculturally abandoned in 1910 should lead the men who fix prices and rates to look beyond the first dollar and make possible a continuous source of revenue.

There are three lines of soil investigation which should be encouraged and carried forward in every state. These are soil surveys, soil analyses, and the operation of soil experiment fields. An accurate soil survey discovers the different kinds or types of soil and ascertains the extent and boundaries of each type, even down to five-acre lots. The soil analysis determines the amount of every important element of fertility contained in each kind of soil, and indicates what element or elements are deficient and must be applied in order to make permanent soil im-

provement possible. The soil experiment field establishes the rate at which the existing fertility may be liberated for plant growth under rational systems of farming and also demonstrates the returns under actual field conditions from investments in materials needed for positive soil enrichment.

The principles of permanent improvement for most soil types are already well established. They include the use of ground limestone for correcting soil acidity and for enrichment in calcium; the utilization of atmospheric nitrogen by proper use of legume crops, the application of phosphorus to most soils, and the liberation of potash from the inexhaustible supply already contained in all normal soils. On some soils dolomitic limestone should be used in order to provide both magnesium and calcium; and on certain abnormal soils, such as swamp muck and residual sand, potassium must also be applied.

The solution of the problem of permanent agriculture in America deserves and will require the best thought of the most influential people; and the man who thinks farm products are high in price may learn a lesson in the fundamentals of national economics by trying to build up a piece of impoverished land from the income it produces.

If there is one agricultural fact that needs to be impressed upon the American people, it is that the farmers of this country have been living, not upon the interest from their investments, but upon their principal; and whatever measure of apparent prosperity they have had in favored localities has been largely taken from their capital stock.

That vast areas of land, once cultivated with profit in the original thirteen states, now lie agriculturally abandoned at the door of our greatest markets, is common knowledge; and that the great majority of the farm lands in the North Central states is even now under-going the most rapid soil depletion ever witnessed, is known to all who possess the facts.

The boastful statement sometimes made, that the American landowner has become a scientific farmer, is as erroneous as it is optimistic. Such statements are based upon a few selected examples or rare illustrations, and not upon any adequate knowledge of general farm practice. Even to this date almost every effort put forth by

the mass of American farmers has resulted in decreasing the fertility of the soil. The American farmer does everything except to restore to the soil the fertility required to maintain permanently its crop-producing power.

Thus, tile-drainage adds nothing to the soil out of which crops are made, but only permits the removal of more fertility in the larger crops produced on the well-drained land. More thorough tillage with our improved implements of cultivation is merely "working the land for all that's in it." The use of better seed produces larger crops, but only at the expense of the soil. Clover and cowpeas, as commonly produced and harvested, add little or no nitrogen to the soil. All the domestic animals on all the farms of the United States are equivalent to less than one cow for each ten acres of farm land, and the farm manure is so limited and is spread so thinly that it adds but little fertility to the soil in comparison with that removed in crops and sold in grain and hay, and in bone and meat and milk.

All these are good farm practice, and they should be continued; but we ought also to stop exporting millions of tons of phosphate which is needed on our own lands. We should also apply millions of tons of ground limestone to our acid soils, and we should produce more legume crops, to be plowed under directly or in farm manure. The world must have bread as well as meat, and the decision between livestock and grain farming must always be based upon preference and profit, and not upon the erroneous assumption that farm manure is either necessary or sufficient for the maintenance of soil fertility.

If the farmers of the great corn and wheat belts of the North Central states are ever to adopt systems of permanent agriculture, it must be done while they are still prosperous, or they too will sometime awake to find their lands impoverished beyond self-redemption.

I realize, of course, that the presentation of these facts is far less popular than boasting of achievements not yet accomplished; but I also realize that the six New England states are now producing less total cereal crops than one county in the Illinois cornbelt, and that ten million acres of tillable lands lie unused in old Virginia, because the crops they are capable of producing without enrichment will not pay the cost of production.

Intelligent optimism is admirable, but fact is better than fiction; and blind bigotry paraded as optimism is dangerous and condemnable. Let us face the facts, and proceed intelligently.



gently to solve the problem of permanent agriculture for America; with the sincere and helpful cooperation of the banker and farmer, of the farm press and the farmers' institutes, of the farm advisers, the college of agriculture, the railroads and the state.

### DEMONSTRATION FARM PICNICS

Picnics have been held on the demonstration farms at Mott, Beach, Dawson, Tioga, Rugby, Lakota, Bathgate and McLeod. The picnic was only one feature of the meetings. After the picnic dinner the men were taken over the farm and the rotations carefully gone over and examined as to yields and the work put on each field carefully explained. Weeds were also studied.

At Lakota, for instance, a patch of sow thistle was found. Few of the farmers knew what it was. This fact gives such weeds a chance to become well-established before their nature is known. This weed produces seed as abundantly as the dandelion and in addition spreads underground by means of underground root stems. It is one of the worst weeds. It would be easy to eradicate when the first little patch appears, but in a few years it will spread so that the job of eradicating them becomes a long tedious job. A county agent would discover such pests before they get much of a start.

The net profits per acre on these farms in 1915 were at Beach, \$8.93; Bathgate, \$2.18; Dawson, \$13.78; Lakota, \$32.43; Mott, \$8.92. The very high profit at Lakota is partly explained by the fact that the field in alfalfa gave a profit of \$90.64 per acre.

The principle crops grown in these farms are corn, wheat, oats, and alfalfa. At Bathgate the question came up as to how much alfalfa seed to sow per acre. Supt. Porter called their attention to a fine stand secured by sowing five pounds per acre. Some mentioned having been advised to sow as much as sixteen pounds per acre.

A dairy barn has just been completed on the McLeod demonstration farm. It is fully modern. The King ventilating system is used and the model stall used by Ex-Governor Hoard at Ft. Atkinson, Wis., has been installed at a cost of two dollars each. Ten milking shorthorns will be kept here as a part of the Experiment Station herd.

The demonstration farm at Tioga was started this spring. The field selected was one of the most weedy ones

in that section. A rotation has been started for the purpose of eradicating the weeds and at the same time raising crops. This is one of the problems on all of the demonstration farms.

While the men were going over the farm the women held a meeting of their own. Misses McDonald, Newton and Ratzlaff of the Agricultural College addressed these meetings. After the farm had been gone over the men and women held a joint meeting.

Superintendent Porter was assisted by Thomas and Doneghue of the Agricultural College and County Agent Hall.

The average attendance of these meetings was 150.

### SWEET CLOVER ON THE EXPERIMENT STATION FARM

The sweet clover sown on the Experiment Station Farm is making a big growth. Some of it is six feet tall and still growing. Some of this will be put in the silo as an experiment to see what kind of silage it will make. Some of the sweet clover has been cut for hay. It was cut before blossoming so as to avoid allowing it to become too woody. It has been found that when the sweet clover is cut close to the ground most of the plants are killed. By cutting it six to eight inches from the ground the plants are not killed and make a second crop for hay.

This sweet clover has been seeded with a nurse crop. It has also been sown without a nurse crop but there has been practically no difference in the stands secured. The yields have been as follows: first crop 1914, one and three-fourths ton per acre; 1915 first crop two and one-half tons and

the first crop in 1916 went two and one-third tons. It must be remembered that this first crop is cut before the plant begins to blossom. This year some of the sweet clover will be put in the silo at the time when the leaves begin to get yellow at the bottom of the stems. This will give some idea of the yields that can be secured at this stage as well as the kind of ensilage it will make.

The pigs have not taken to the sweet clover very readily, they much prefer the alfalfa. The pigs on sweet clover have also required more grain to make a pound of gain than those on alfalfa. This means that it has cost more to make gains on the pigs pastured on the sweet clover than on those pastured on alfalfa.

### ONE POUND ALFALFA SEED PER ACRE


One pound alfalfa seed per acre puts five seeds on each square foot. One alfalfa plant per square foot is plenty thick. One reason that so much seed has been sown is that it has either been sown so deep that most of the seeds failed to come up or so shallow that they did not have a good chance to germinate and take root. Half an inch is as deep as alfalfa seed should be sown and a little shallower is often better.

### LIGHTNING RODS



Best rods sold. Don't let lightning strike your barn or house. Prices as low as 7c a foot. Send today for free circular and get full particulars.

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## SAL-VET

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### Costs You Nothing

Hundreds of thousands of farmers and stockmen figure that it really don't cost them a cent to feed SAL-VET. They have found from actual experience that this great worm destroyer and live stock conditioner adds much more to their profits than it takes from their pocket books. For example: it costs only 1/12 of a cent a day for enough SAL-VET to rid any sheep or hog of worms and only 1/4 of a cent a day for each horse or head of cattle. How else can you invest so little and receive so much in faster gains, fewer losses, feed saved and bigger stock profits? Read this—

"I enclose check for the SAL-VET you recently sent to me. Four times this sum would not begin to pay for the benefit I derived from feeding SAL-VET." — W. B. Wallace, Franktown, Va.

Remember, I don't ask you to risk a penny in advance. Just tell me how many head of stock you have; I'll see that you are supplied with enough SAL-VET to last them 60 days. You pay the freight when it arrives; feed it as directed, and if it fails to do what I claim and you make a specific report in 60 days, I'll cancel the charge. You won't owe me anything.

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PRICES:	Each 40 lb. package.....	\$2.25
	Each 100 lb. package.....	5.00
	Each 200 lb. package.....	9.00
	Each 800 lb. package.....	13.00
	500 lbs.....	21.12

Extra discount in larger quantities.  
No order filled for less than 40 lbs.  
Thousands of dealers sell SAL-VET at above prices.

In the far West and South the prices are a little higher on account of the extra freight charges. On this 60-day trial offer supply for a 60 days' trial is based on 1 lb. of SAL-VET for each sheep or hog and 4 lbs. for each horse or head of cattle. Beware of imitations known as Sal-This, Sal-That and Sal-Something-Else. This genuine, reliable, guaranteed preparation is SAL-VET.



## ANNUAL MEETING AND SEED CONTEST

## North Dakota Improved Seed Growers' Association

The Annual Seed Contest and Meeting of the North Dakota Improved Seed Growers' Association will be held at Devils Lake in connection with the Lake Region Seed Growers' Association's fair and institute. On invitation of the Lake Region Branch Association, the vote of the State Association Council placed the meeting at Devils Lake and fixed the contest to conform with the Lake Region contests in November.

The North Dakota Improved Seed Growers' Contest is open to all citizens of North Dakota, provided they conform to the rule to show the exact quality of seed which they are holding for sale as seed.

The seeds exhibited in the contests are not to be better or worse than that which is to be put on the market as seed for sowing. All who compete in this contest should prepare by pulling from the seed fields other kinds and varieties of grain and those weeds whose seeds are difficult to remove by cleaning machinery. Hand-picking of seed is barred. Do that for your own seed plot.

Get ready for the Big Contest. The rules and shipping directions will be put forth in the annual premium list. Send in your Annual Membership dues of \$1, and ask for the premium list.

H. L. Bolley, Secretary-Treasurer,  
N. D. Improved Seed Growers' Association.

## GOVERNMENT CROP REPORT

A summary of the August crop report for the State of North Dakota and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted thru the Weather Bureau), U. S. Department of Agriculture, is as follows:

## Corn

State: August 1 forecast, 12,000,000 bushels; production last year (final estimate), 9,800,000 bushels.

United States: August 1 forecast, 2,780,000,000 bushels; production last

year (final estimate), 3,054,535,000 bushels.

## All Wheat

State: August 1 forecast, 68,200,000 bushels; production last year (final estimate,) 151,970,000 bushels.

United States: August 1 forecast, 654,000,000 bushels, production last year (final estimate), 1,011,505,000 bushels.

## Oats

State: August 1 forecast, 70,900,000 bushels; production last year (final estimate), 98,000,000 bushels.

United States: August 1 forecast, 1,270,000 bushels; production last year (final estimate), 1,540,362,000 bushels.

## Barley

State: August 1 forecast, 34,200,000 bushels; production last year (final estimate), 44,800,000 bushels.

United States: August 1 forecast, 195,000,000 bushels; production last year (final estimate), 237,009,000 bushels.

## Rye

State: Preliminary estimate, 2,630,000 bushels; production last year (final estimate), 2,70,000 bushels.

United States: Preliminary estimate, 41,900,000 bushels, production last year (final estimate), 49,190,000 bushels.

## Flaxseed

State: August 1 forecast, 7,050,000 bushels; production last year (final estimate), 6,534,000 bushels.

United States: August 1 forecast, 14,100,000 bushels; production last year (final estimate), 13,845,000 bushels.

## Potatoes

State: August 1 forecast, 7,970,000

bushels; production last year (final estimate), 7,200,000 bushels.

United States: August 1 forecast, 364,000,000 bushels; production last year (final estimate), 359,103,000 bushels.

## Hay

State: August 1 forecast, 678,000 tons; production last year (final estimate), 660,000 tons.

United States: August 1 forecast, 84,600,000 tons; production last year (final estimate), 85,225,000 tons.

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**Need A Grain Tank**

We offer at greatly reduced prices your choice of 30 steel and wooden tanks, in various sizes, suitable for storing grain. These tanks are all new and were originally built for a brewery, but a dry victory made them useless for this purpose and they are now for sale at prices that are just about half their real worth. Sizes range from 5 ft. to 9 ft. high and 4 ft. to 6 ft. and 10 ft. wide. Write at once for details and prices.

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**DURUM WHEAT WANTED**

We are in the market for a few cars of choice

**DURUM WHEAT also MILLET SEED**

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**BORING AND REAMING OF CYLINDERS**

We rebores and ream all sizes of auto and gas engine cylinders fitting same with larger pistons and rings. We weld all Metals. Our machine shop is equipped to handle both large and small work. Send your next job to.

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# 20 Fall Bearing Strawberry Plants FREE!

- - and the Latest Book on Fallbearing Strawberries

This entire collection of Twenty Plants, and the New Book, \$500 AN ACRE from FALLBEARING STRAWBERRIES will positively be sent FREE and POSTPAID to every reader who takes advantage of our Special Offer. The Plants will be sent at the right time to set out in the Fall.

The Twenty FREE Plants are made up in the following assortment only, and cannot be changed, as to varieties.

**5 Superb** (Perfect). The best and most profitable of the Fallbearing sorts also yielding good crops in June, after fruiting the previous Fall. Plants are strong, and stand the winter well, after producing a heavy crop of fruit from about August 15 to November 15.

**5 Progressive** (Perfect). Not so large as the Superb, but of the choicest Quality, and an immense yielder. Fruit bright red and smooth. The plants are vigorous and healthy, much like the Dunlap. Blooms well protected by foliage and give good long pickings.

**5 Americus** (Perfect). Plants are fine growers and they produce abundantly. Berries are medium to large in size, of regular shape, and very beautiful. The fruit is of the finest flavor, and a favorite everywhere. One of the most profitable of the Fallbearing Varieties.

**5 Unnamed \$1000 Hybrids** Single specimens of New Varieties, as yet unnamed, which have shown great promise, and upon the introducers place a high valuation. They are offered for trial and experimentation. From these valuable Hybrids YOU may develop some valuable new varieties of Fallbearing Strawberries.

The Twenty Plants, carefully packed in moss, will be sent to you direct from one of the largest nurseries in the United States, in time to set out in the Fall. They will bear lots of choice fruit next Fall, and you will have hundreds of plants to set out and to sell.

## Send Coupon Today ➡

Remember, The Twenty Plants, and the New Book are sent absolutely FREE AND POSTPAID, as a premium with

2-Year Subscription to  
**North Dakota Farmer**  
at \$1.00

## Make \$500.00 an Acre This FREE Book Tells How

This booklet is given FREE with the Twenty FREE Plants, and contains the most up-to-date information on growing and propagating the Fallbearing Strawberry. You can make these Twenty Free Plants form the foundation of a profitable business by setting them out as a "Propagating Bed" and raising hundreds of plants for future planting and for sale. The Booklet tells you how to do it. It tells you how to Prepare and Fertilize the Soil, how to set out the Plants, how to obtain the most plants from each of the Twenty FREE Plants, how to Grow Berries of the Choicest Quality, and how to Set out a Commercial Plantation. If you are interested in Fallbearing Strawberries, you need this book, and you can get it, with the Twenty FREE Plants by simply taking advantage NOW, of our liberal subscription offer.

JUST SEND \$1 for 2 years subscription to the North Dakota Farmer and the Twenty Plants will be sent to you, FREE AND POSTPAID, in time for planting this Fall, together with the Book. BUT DON'T DELAY. The Supply of plants is limited, and no more can be obtained on this Liberal Offer after our supply is exhausted. Send the coupon today to **NORTH DAKOTA FARMER, LISBON, N. D.**

**\$500  
AN ACRE**  
from  
**FALL BEARING  
STRAWBERRIES**

## FREE Fallbearing Strawberry Plants

FREE AND POSTPAID

Gentlemen:—Please send me, in time for planting this Fall, your collection of Fallbearing Strawberry Plants, as follows: 5 Superb, 5 Progressive, 5 Americus, 5 Unnamed \$1000 Hybrids, and a copy of the New Book, \$500 AN ACRE from FALLBEARING STRAWBERRIES.

I am enclosing \$1.00 to pay for two years subscription to North Dakota Farmer, Lisbon, N. D.

Please state whether New ( ) or Renewal ( ).

Name.....

Local Address.....

Post Office.....State.....



**Pasture**

State: August 1 condition 96, compared with the ten-year average of 83.

United States: August 1 condition 86.9, compared with the ten-year average of 81.6.

**Prices**

The first price given below is the average on August 1 this year, and the second the average on August 1 last year.

State: Wheat, 111 and 123 cents per bushel. Corn, 74 and 69. Oats, 32 and 40. Potatoes, 73 and 70. Hay, \$6.00 and \$5.50 per ton. Eggs, 16 and 14 cents per dozen.

United States: Wheat, 107 and 106.5 cents per bushel. Corn, 79.4 and 78.9 cents. Oats, 40.1 and 45.4 cents. Potatoes, 95.4 and 56.3 cents. Hay, \$10.70 and \$11.02 per ton. Cotton, 12.6 and 8.1 cents per pound. Eggs, 20.7 and 17.0 cents per dozen.

(Printed and distributed by the Weather Bureau at Bismarck, N. D.)

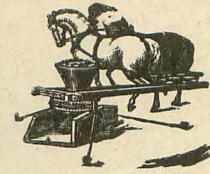
**UTILIZING SURPLUS MILK****Commercial Manufacture of Buttermilk and Artificial Buttermilk May be Made Profitable.**

One of the most economical ways in which milk plants can dispose of surplus milk, say specialists in the department, is by the sale of buttermilk or of artificial buttermilk. The department has recently expressed the opinion that under the Food and Drugs Act interstate shipments of artificial buttermilk—that is to say, the product made from skimmed milk or from skimmed milk and whole milk which has not been churned—should be labeled and sold under a name indicating its true character. This opinion, however, does not imply in any way that artificial buttermilk is not a healthful and desirable beverage.

For the benefit of those dealers who do not understand the commercial manufacture of buttermilk and artificial buttermilk, the department has issued the following instructions:

"Clean, sweet skim milk, or whole milk, should be used—and pasteurization is preferable, as it insures a better product from both a commercial and a sanitary standpoint. Better results are obtained from skim milk if some whole milk is mixed with it, as one part whole milk to three parts skim milk. Run the milk into a water-jacketed vat, and add good, clean starter enough to ripen the milk by the time wanted for churning. Five to ten gallons of starter for each 100 gallons of milk should be sufficient. Take particular care to keep a

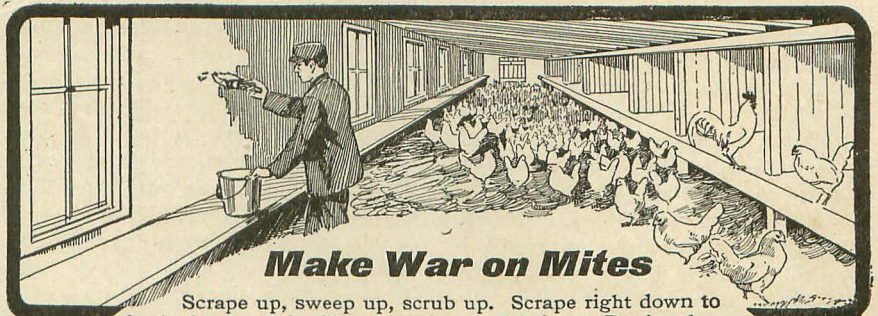
good starter on hand, renewing it as often as necessary. Cover the vat to keep out flies and dirt, and ripen the milk at a temperature of from 60 degrees to 70 degrees F. The ripening temperature will depend upon the amount of starter added and the length of time which the milk has to set. Ripen the milk until it is coagulated into a rather soft curd. If the milk ripens too rapidly, run cold water

**SWEEP AND BELT POWER**

Feed Grinder for gas engines. We also have gas engines, cream separators, manure spreaders, vehicles and harness. Ask for our low prices; they are free.

Emil Briss Co., Necedah, Wis.

"I saw the ad in the N. D. F."

**Make War on Mites**

Scrape up, sweep up, scrub up. Scrape right down to fresh clean wood. Then paint and disinfect. Don't rely on whitewash, for says the Washington Experiment Station (Bull. No. 74), "Neither air-slacked lime nor whitewash will eradicate mites." Use

**CARBOLA**  
The Disinfecting White Paint

Snow-white mineral paint combined with the world's strongest germicide. Kills lice, mites, nits and fly eggs, also the germs of roup, canker, white diarrhea, and other deadly diseases. Absolutely harmless to the birds. Unexcelled as a lice powder. Comes in powder form. Mix with water and it's ready to use. Put on with brush or sprayer. Gives a beautiful, smooth white coating on any surface that positively will not peel, blister, or flake.

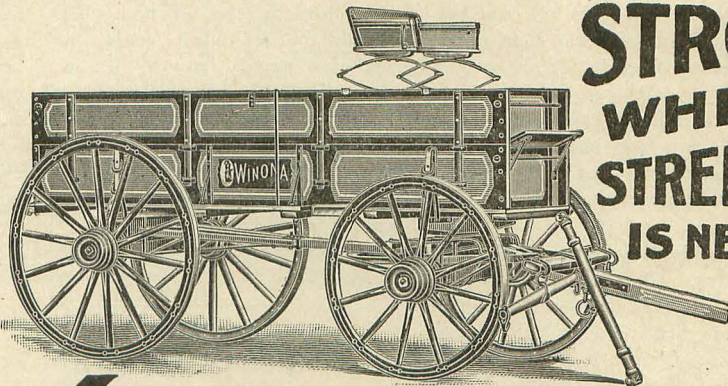
**Use It Instead of Whitewash**

to paint health and sunshine into poultry houses, dairies, stables, and cellars. Paints and disinfects at one operation, saving one-half the labor and expense. Endorsed by all the leading Experiment Stations and prominent poultry and dairy farms.

10 lbs. (10 gals.) for \$1 and postage. 20 lbs. (20 gals.) for \$2 delivered free. 50 lbs. (50 gals.) for \$4 delivered free.

If your dealer will not supply you, write us sending his name. Send 25 cents for trial package—enough to paint and disinfect 250 square feet.

**CARBOLA CHEMICAL CO., DEPT. J, 7 EAST 42d ST., NEW YORK CITY**



**STRONG  
WHERE  
STRENGTH  
IS NEEDED**

**WINONA** Wagons have extra protection at points of greatest strain. Outer bearing axles bring load up against wheels, preventing break-down and insuring light draft. Clipped gears. Bent and double riveted Felloes. Strongest Skeins and Poles. Re-inforced Hounds—Built-to-last Boxes. Iron Clad Hubs when ordered.

**WINONA FARM WAGONS**

**STRONGEST** and lightest running. "Good timber and bone dry" with highest grade ironing and quality painting. The wagons you can depend on to carry your heaviest loads without the annoyance and expense of frequent breakdowns.

**Write for Catalogue F**  
it tells why Winona wagons lead them all.

**Winona Wagon Company, Winona, Minn.**



around the vat to check the process. When the milk is ready, strain it into the churn and churn for about 20 minutes, or until the butter has gathered in small granules. The milk should be churned at 55 degrees to 65 degrees F. When butter comes, strain the buttermilk and cool it at once, using a cooler if possible. If no cooler is available, put the cans immediately into a tank of ice water or a refrigerator. If possible, bottle the retail buttermilk at once. Many firms use brown bottles for buttermilk, which seems to be a good plan, as no mistakes will be made in delivery, and the bottles can be kept separate for washing. Whenever possible, use a separate bottler for buttermilk. If this is not possible, particular care should be taken in washing and sterilizing the machine after buttermilk is handled.

"Further information on this subject is given in United States Department of Agriculture Bulletin 319, entitled 'Fermented Milks,' which will be sent free on application."

#### NORTH DAKOTA FARMERS BUYING CATTLE?

The North Dakota farmers are increasing the beef cattle on their farms. Mr. Peters of the N. D. Experiment Station states that the North Dakota breeders of beef cattle have sold out all bulls and many have been brought in from other states. He states that the demand for good beef stock is unusually active.

This indicates that the North Dakota farmer is finding that beef cattle works in well with grain farming.

Up to two years ago beef production has stood still or even gone back, while population has been increasing. This has been true not only in the United States but in all agricultural nations.

An increase is now noticeable in the United States, still the people of the United States are now eating more meat than is produced in the Union. The American farmer is evidently going to increase his meat production so as to at least supply the home market.

The chief meat exporting nations are: Argentine, Australia, Canada, Mexico, New Zealand and Uruguay.

If the American farmer does not produce enough meat to supply the American market these other meat exporting countries will.

Rotation of crops is necessary for keeping up production. When crops are rotated such crops as clovers, alfalfa, grasses and corn have to be grown and the best way to market these is thru livestock, which means

that the keeping up of the production of the American farm is dependent on the raising of livestock.

#### NORTHERN PACIFIC RAILWAY OPENS NEW 2000-MILE BELL 'PHONE LINE BETWEEN ST. PAUL AND TACOMA.

On July 21 Northern Pacific Railway opened a new Bell telephone line between their general offices at St. Paul and the general offices at Tacoma. Connections were made with the President's office here and the General Superintendent's office on the Pacific Coast. Mr. Clark stated "that the connections were good and he had no trouble in conversing with Mr. Richards and Mr. Blanchard"; in fact, he could hear these people at Tacoma better than a great many local 'phone conversations.

#### HOG PASTURES

Pigs make the cheapest gains on pasture. Trials at the North Dakota Experiment Station indicate that brood sows running on good pasture and nursing litters will do as well when receiving one to one and a half pounds of grain per each 100 pounds live weight of sow, as sows in dry lot receiving two and one-half pounds grain per day per each 100 pounds live weight. The pasture just about cuts the feed cost in two. The pasture alone does not furnish enough feed for either the brood sow with litter or for the weaned pigs. They should be fed some grain, so as to make a rapid growth. In this way the spring pig can be ready for market before real cold weather sets in.

Alfalfa, clover, bromus and winter rye make the earliest pastures. When these have not been provided early spring seeding of such grains as oats and barley or rape are the next best thing.

#### GRIMM ALFALFA

Grimm has proven to be the most hardy of the alfalfas in common use. The price is 75 cents to a dollar a pound. Why not have some Grimm seed to sell? Alfalfa produces seed the best when sown in rows and cultivated. When sown in rows 30 to 36 inches apart one pound of seed per acre is enough. The first crop which should make a ton per acre can be made into hay and the second crop saved for seed purposes. The states to the east of North Dakota are looking to North Dakota for Grimm alfalfa seed. This ensures a good market for the seed at good prices.

fa seed. This ensures a good market for the seed at good prices.

**GET THIS BOOK**

Galloway's wonderful book of catalogues, describes fully and prices Galloway Cream Separators, Manure Spreaders, Gasoline Engines, Farm Tractors. Saves 1/3 to 1/2 on prices usually asked. Also lists and prices farm implements, fencing, auto supplies, everything for farm and household.

**SAVE MONEY**

By asking for this 260-page book today. A postal will do. First edition exhausted; second edition this bargain book now ready.

**WM. GALLOWAY CO.**  
Dept. 987 Waterloo, Iowa

#### Caught 51 Rats One week

Trap resets itself; 22 inches high; will last for years. Can't get out of order; weighs 7 pounds. Twelve rats caught one day. Cheese is used doing away with poisons. The trap does its work and never fails and is always ready for the next rat. When rats and mice pass the device they die. Rats are disease carriers; also cause fires. These Catchers should be in every school house. Rat Catcher sent prepaid on receipt of \$3. Mouse Catcher, 10 inches high, \$1. Money back if not satisfied.

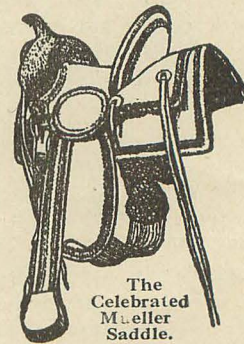
**H. D. SWARTS**  
Inventor and Manufacturer  
Universal Rat and Mouse Traps  
Box 566 : : : Scranton, Pa.

#### MINNESOTA FARM FOR SALE

160 acres good clay loam land 3 miles from Leonard, Beltrami County, Minnesota. On state road, 1 mile to school and church. 40 acres under cultivation, balance fenced for pasture. House, barn, granary and other buildings in good condition. Scandinavian settlement. A bargain at \$30 per acre on easy terms. Write for particulars to

**CLAYTON C. CROSS,**  
18 Markham Bldg., Bemidji, Minn.

#### A\$45 Saddle, \$36 Cash



The Celebrated Mueller Saddle.

Our latest Swell Fork Saddle, 14-inch swell front, 28-in. wool-lined skirt, 3-in. stirrup leather, rig, made of best oak leather, guaranteed beef hide covered solid steel fork.

#### THE FRED MUELLER

Saddle & Harness Co., Dept. R. 1413-15-17-19 Larimer St. Denver, Colo. Send in your name for our catalogue now ready.

#### READ THIS

There must be a reason why there is such a demand for Justin's Boots. If you are going to wear boots, why not wear the best? Yours for the Best Cowboy Boots Made. Send us your address on a postal card and we will send you our catalogue, and self-measuring system.

GIVE US A TRIAL

**H. J. JUSTIN & SONS**  
Mfrs. of Justin's Celebrated Cowboy Boots. NOCONA, TEXAS





## NORTH DAKOTA DEVELOPING INTO A DAIRY STATE

A study of the United States census statistics brings out the interesting fact that the dairy industry is rapidly developing in practically all sections of the union, having increased approximately 20% in the last decade. It is interesting to observe the rapid increase in the industry in the state of North Dakota. The following facts show how steadily this development has taken place. In 1900 there were in the state 125,000 dairy cows. This number has increased at approximately 10% per year from that time. In 1910 the number had reached 259,000; in 1913, 277,000; in 1914, 305,000; in 1915, 339,000; and on January 1, 1916 the government estimates showed 373,000 dairy cows in the state.

North Dakota has natural advantages which in many respects make it an ideal dairy state. It is centrally located, thereby making markets possible either to the east, south or north or west. The state is well provided with excellent transportation facilities, being traversed by several transcontinental railways that make rapid transportation possible. On account of the highly perishable nature of milk and its product this is a very important factor for a successful development of the industry.

From the standpoint of climate, North Dakota is well adapted to dairy farming. The necessity of properly housing the dairy herd cannot be over emphasized, and inasmuch as the herd has to be housed in any climate, it is possible to care for the herd in a cold climate almost as cheaply as in the warmer. The uniformity of our temperature and the dryness of the atmosphere make it possible to protect the cattle very efficiently.

From the standpoint of dairy feeds, the state is well adapted to the production of leguminous crops and recent developments show that corn is being very successfully grown in many sections of the state. The success of such crops as alfalfa, clover, corn and the native grasses make it possible for an economical ration to be produced on practically all farms.

The ease with which a supply of cold water is obtainable from deep wells makes it possible to control very efficiently the temperature of milk and cream, thereby enabling the production of high class dairy products.

It has been successfully demonstrated by a large number of farmers that any one of the leading dairy breeds is adapted to this state. The demand for dairy products at the present time greatly exceeds the supply and the prospect is that future demand will in-

crease even more rapidly than the supply so that from the standpoint of markets we are more favorably supplied than are some of the older dairy sections of the east and south.

The problem in North Dakota is largely one of developing our industry

to meet the demand, rather than developing the demand to the point of handling our supplies. With these advantages to its credit North Dakota is developing and will continue to develop into one of the leading dairy states of the union.

## Wanted 30,000 Men For Harvest Work on Immense Crops of Western Canada

**Wages \$3.00 Per Day and Board**  
**Cheap Railway Rates From Boundary Points**

Employment bureaus at Winnipeg, Regina, North Portal, Saskatoon, Ft. Frances, Kings Gate, B. C.; Coutts, Calgary, Alberta.

**No Conscription—Absolutely No Military Interference**

For all particulars apply to the following Canadian Government Agent.

W. E. BLACK, Clifford Block, GRAND FORKS, N. D.

## Reboring and Grinding of Cylinders

**This is the time to fit up your steam engines and  
gas tractors for the coming season**

We can rebore and grind your cylinders, fit new oversize pistons and rings, make and fit new crank pins, straighten shafts, bore and bush gears and clutches or do any kind of machine work. Refue boilers and replace stay bolts. We carry in stock all sizes of stay bolts, patch bolts, bracket bolts, rivets, boiler flues, stay-bolt taps and boiler taps, shafting, shaft hangers, cast iron pulleys, woodsplit pulleys. Write and let us quote prices on any work you have.

**Craig Brothers, Fargo, N. D.**

P. O. Box 295. - - - - Telephone 554 W.

## NORTH DAKOTA SCHOOL LAW

For the first time since 1911 has the State published a volume of the School Laws, and not until 1919 will another edition be printed by the State.

### WOULD YOU KNOW

For what reasons a pupil may be suspended or expelled?  
Whether one is allowed to read the Bible in school?  
What branches must be taught every day?  
For what purposes the school house may be used?  
Who may vote on school matters and what are the voters' qualifications?  
How schools may be consolidated?  
What recourse one has if he is not satisfied with the ratings of the examining board?  
Whether free text-books may be adopted without a vote?  
What to do when a pupil or parent disturbs the school?  
What provision is now made for transportation of pupils?  
How pupils may be compelled to attend school?  
Whether children may be employed in stores and factories?  
How a certificate may be revoked?  
What the law is regarding drinking cups, fire escapes, hitching posts, school libraries, pension fund, accredited diplomas, etc.?

THEN ORDER A COPY OF THE LATEST SCHOOL LAWS  
Price, post paid, 30 cents.

**W. G. Crocker, - Lisbon, North Dakota**



# North Dakota Farmer

Entered as second class matter in the postoffice at  
Lisbon, North Dakota

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**Vol. 18 AUGUST, 1916 No 2**

Destroy the weeds. Don't let them  
go to seed.

Farmers have not a few friends (?)  
from whom they can well pray to be  
delivered.

The man that rams his head against  
a moral conviction is not wise. It  
pays to be reasonable.

There is nothing more practical  
than to have convictions about what  
is right and what is wrong.

The school of Hard Knocks has  
graduated a good many sane philoso-  
phers, tho as a rule its alumni is made  
up largely of discouraged men and  
women.

Save the heifer calves. The north-  
western states will greatly profit by in-  
creasing the kine population. Well-  
bred calves spell prosperity for the  
farmer.

Weather conditions are always un-  
certain. The past ten years have  
demonstrated the unwisdom of de-  
pending exclusively on shock thresh-  
ing, especially where a large acreage is  
at stake and threshing machines are  
scarce.

Optimism does not mean that one  
should smile and look cheerful while  
legalized injustice preys upon the  
toiler and the producer, but because  
he is sure that righteousness will ul-  
timately triumph over iniquity and that  
he will do his full share to bring about  
the desired change.

If some genius would invent a  
method for extracting the water that

has found its way into railroad and  
other corporation stocks the cost of  
living would be materially lowered.  
Dividends declared on water is noth-  
ing short of robbery and some means  
should be provided to squeeze it out  
even if a temporary flood should re-  
sult.

Any political party that would serve  
the people as against corruption and  
misrule must possess moral initiative  
and be essentially in the business of  
reform. This for the reason that  
honesty in business and politics have  
always and ever will be assailed by  
those who appraise their selfish in-  
terests as above their country's wel-  
fare. Time and circumstance never  
cures them, hence the struggle for  
political decency must go on and on.

Such gambling devices as craps,  
poker and roulette are outlawed and  
those who indulge in such games are  
not only considered disreputable but  
are severely punished, when appre-  
hended. This is true of all small fry  
offenders. But dealing in futures  
when not less than \$200,000,000 is  
annually mulcted from the farmers  
who produce and the consumers who  
eat wheat, goes on merrily and the  
public never bats an eye. Big gam-  
blers seem to be immune.

Owing to the fact that we have oc-  
casional autumns when, for weeks at a  
time it is too wet to thresh, but fair  
enough for plowing, if a portion of the  
grain were stacked the plows could be  
kept at work. In other words if the  
time wasted while waiting for the ma-  
chine were spent stacking grain, then  
should wet weather set in the fields  
would be cleared for plowing between  
showers. It would seem wise, there-  
fore, for a farmer to stack some grain  
every year unless he owns a threshing  
machine.

When we consider the length of  
time required to settle a case in court,  
where the stakes are large, or to get a  
settlement with the government, as is  
illustrated in some of the Indian  
treaties, we wonder if farmers **only**  
are in need of outside help and advice  
in order to manage their business  
properly. Some of these claims re-  
main in the courts or before Congress  
from eight to forty years before set-  
tlement is reached. A propaganda for  
speedier and cheaper justice would  
seem to be as important as "better  
farming."

The desire for free homesteads just  
about squares with their scarcity.  
The day has passed, never to return,

when a homesteader can take his  
choice of several excellent quarter sec-  
tions of land, all lying in the same  
neighborhood. Moreover, from this  
time onward there will be a steady rise  
in land values thruout the north-  
western states. And just in propor-  
tion as land values go up, larger and  
surer profits must be realized in order  
to make a fair dividend on the invest-  
ment.

Diversification alone will, in the  
opinion of the N. D. F., meet this  
emergency and at the same time im-  
prove rather than diminish the pro-  
ductivity of the soil.

The farmer is dependent upon his  
immediate environment for his social  
pleasures, says Edwina Mary Layman,  
of the Colorado Agricultural College.  
In communities where the farms are  
close together there are possibilities  
of neighborhood gatherings and of real  
community interest for the farmer and  
his family. On secluded farms the  
recreative side must come, more or  
less, from within.

On every farm there are possibil-  
ities for some equipment for play  
for the children; and it is rapidly  
becoming a recognized necessity that  
some forms of play apparatus should  
exist on every farm. Among the out-  
side pieces of equipment that are pos-  
sible for nearly every farm child are  
the following:—a sand-bin (made so  
it can be covered when not in use); a  
rope swing, dear to the heart of  
every child; a see-saw; games, such  
as tennis, tether-ball, volley-ball, cro-  
quet; quoits (pitching horse-shoes)  
etc., a tent or rude shack, preferably  
built by the children themselves, for  
their very own playhouse; and a  
small slide which could be used as a  
toboggan in the winter. With the  
added enjoyment to your children's  
lives and their appreciation of the  
things you have done for them, you  
will find yourself more than repaid  
for the time and money expended.

In the evenings it would make  
home much more attractive if there  
were some form of music and an open  
fire, for no two things tend to draw  
the family circle into closer comrade-  
ship than these. Unity, harmony, and  
peace are developed—things essential  
to every home. Tell stories or read  
to your children—make their inter-  
ests yours, and to a certain extent,  
your interests and problems theirs.  
Fit them as nearly as possible for the  
life they will have to live in their  
turn, and the greatest heritage you  
can leave them is that of a happy,  
contented childhood, full of tender  
memories of comradeship and true  
interest in all that concerns each  
individual.



# Livestock Department

## FARM AND STOCK NOTES

N. J. Shepherd

Growing colts need plenty of exercise.

Severe bits often ruin the disposition of horses.

Hereditary excellence is what gives one breed superiority over another.

Butter is better when it is fresh than it ever will be again.

Let the first gait into which your colt is trained be a brisk walk.

Deterioration and loss is the inevitable outcome of miscellaneous breeding of immature animals.

Prepotency is the power of an animal to stamp his progeny with his own characteristics.

Take the dirt off the legs of horses with a rag or soft brush rather than with a curry comb.

With pigs, to raise good breeding stock, steady thrifty growth is needed and no sudden changes of condition.

It is easy enough to add several years to the life of a horse by not abusing him while young.

Fast walking like every other desirable gait is the inherent power to perform the most service in the least possible time.

As a rule, the men who are willing to pay the best prices for the horses they purchase want them well trained.

There is no better or cheaper place to develop a young horse and put him in proper shape for market than on the farm.

The management of the dairy gives the farmer a continuous income and an advantage that he does not have in any other farm industry.

A plentiful supply of dry bedding not only makes it more comfortable for the animal to lie on, but in every sense increases its comfort.

As a rule there is nothing held on the farm the sale of which under certain circumstances may not be the very wisest thing to be done.

It is not good policy to force the growth of colts by giving them stimulative foods and overfeeding them. The overgrown horse is seldom a durable one.

A heifer that is being raised for the dairy should be handled and made accustomed to all necessary manipulations from the time she is a calf until mating.

To obtain the best results in rearing a young brood and keeping it up to the highest standard of excellence rapid growth and early maturity is the first object.

It is a law of physical growth that the time lost by insufficient feeding or the absence of sanitary care in the development of animals can never be recovered.

One advantage of always keeping the pigs thrifty and growing is that they are always ready for market and the owner is enabled to take advantage of high prices if offered.

There is much waste on a farm that can be utilized in no other way as effectively as by poultry which pick up grain and refuse everywhere and convert it into profit.

In raising and in buying animals of any kind to be turned into meat no animal that does not show an aptitude for taking on flesh readily and rapidly should be purchased.

Dryness is one of the requirements in the production of the finer grades of wool and it is a fact that exposure to dampness makes the wool harsh and brittle and the fiber weak.

While generally corn is the cheapest hog feed, it does not follow that it is economical to feed all corn or even too large a proportion of corn to accomplish the best results.

While good butter flavor is very largely the result of the proper souring of the cream, undesirable flavors are often the result of poor feed, and poor care of the milk and cream.

Cream that is ripe and ready for churning should have a pleasant acid flavor. It should be smooth, have a velvety appearance and be thick enough so that it will stick to the spoon or paddle.

The economic value of all foods depends upon their digestibility. If for any reason the food supplied to an animal is in whole or in part indigestible, its value is to that extent diminished.

The more rapidly an animal gains in weight the smaller the proportion of feed required to bring it to maturity or fatten for market even if this requires heavier feeding during the shorter time necessary to effect the same results. Consequently there is greater profit in enabling an animal to gain steadily from birth until marketed, or in early maturity.

## CLASSIFIED ADS.

One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

## LIVE STOCK

**WORLD'S CHAMPION A. R. RED POLLS!**  
Minnesota Champion A. R. Guernseys  
Consistent Winners in the 1915 Show Ring  
20 of our foundation cows average 601.6 lbs.  
butterfat, official.  
Jean Du Luth Farm, Duluth, Minn.

**REGISTERED Gurnsey bulls old enough for service.** Also a few heifers for sale. FRANK W. RICHARDSON, Garden City, Minn., R. 1.

**CALVES. SHORTHORNS,** rich cherry red, HOLSTEIN, sharp black and white, GUERNSEYS, rich orange fawn with white markings. Few very choice grade calves marked as described above. Straight top line, heavy boned, hardy calves that make big type cattle. Write Edwin Howey, South St. Paul, Minn.

## ENVILLA STOCK FARM

Cogswell, N. D.  
Will quote you special prices at any time on Angus Cattle, Feeding and Breeding Sheep, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat, Bird Dogs and other breeds, Angora Cats. All varieties of chickens, turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Live Foxes, Skunks, Mink and Badgers.

## Bixby's Red Polls

My herd bull, J. D. Merryweather, No. 24396, is the son of J. D. Millie, A. R. Grand Champion cow at Minnesota and Montana, in the 1915 show-ring and won the milk and butter contest with Guernseys, Jerseys and Brown Swiss competing with records of 600 pounds butterfat. J. D. Millie weighed 1280 pounds at thirty months old, and is full sister to the World's Champion two-year-old heifer. J. S. BIXBY. LISBON, N. DAK.

**HOLSTEIN AND GUERNSEY HEIFER AND BULL CALVES.** Choice selected promising dairy calves, practically pure Holstein and pure Guernsey, but not registered, nice color. \$20.00 each, all express paid to any point in North Dakota and adjoining states. Order two, you will be so well pleased you will want more.—Meadow Glen Yards, Whitewater, Wis.

## FOR QUICK SALE

Crowded for range, am compelled to sell 40 head of mares and geldings. Address Patrick McDonnell, Ennis, Mont.

**ROCKY HILL SHROPSHIREs.** Twenty-five head of registered ewes for sale reasonable. Also, a nice smooth bunch of ram lambs and a few aged rams. Ernest Palfrey, Hope, N. D.

## MISCELLANEOUS

**HOMESEEKERS!** For several years our Company has been locating contented people on its lands in AITKIN COUNTY. We can locate more. Send for maps describing this idea, dairy country. ARNOLD, Land Agent, ROCK ISLAND RAILWAY, 107 Wolvin Bldg., DULUTH, MINN.

**LEARN TO SPEAK IN PUBLIC.** We train men and women to be good public speakers. Money, position and prominence to be gained thru good platform work. Total cost is only \$5.00. We teach other things—send for outline. Prin. W. C. Moore, New Egypt, N. J.

**WANTED.** Live Foxes, Skunks, Mink and Badgers, any time. Envilla Stock Farm, Cogswell, N. D.

**WANTED to hear from owner of good farm for sale.** State cash price and description. D. F. Bush, Minneapolis, Minn.

**POWER FARMING.** The magazine of farming with mechanical power. Send 10 cents for three months' trial subscription. Power Farming, Box C, St. Joseph, Mich.



The aim in keeping stock should be to secure the most rapid and largest growth at the least cost compatible with the end in view. The main source of increasing cost is thru waste in feeding. This may not at all times be evident but when it is remembered that when food is not properly digested and assimilated by the animal it is just as much wasted as when it is trampled beneath their feet; it will be apparent that when feed is not put up in the most economical manner or fed in an economical way the cost is increased.

### SUMMER FEEDING OF DAIRY COWS

One of the most common mistakes in the feeding of dairy cows on the farm is that the good cows are not given a sufficient quantity of feed above that required for their physical maintenance to obtain the maximum quantity of milk they are capable of producing. Successful feeding of dairy cows involves the providing of an abundant supply of palatable, nutritious feed at a minimum cost and feeding in such a way as to receive the largest milk production from the feed consumed. Feeding for profit is defined as liberal feeding, or feeding to the full capacity of the cow, in a new Farmers' Bulletin of the U. S. Department of Agriculture, No. 743, The Feeding of Dairy Cows, which discusses many of the factors involved in economical feeding.

From the standpoint of economical milk production, a dairy cow generally should not be fed more than she will consume without gaining in weight. There are times, however, according

to the bulletin, when it is desirable to make exceptions to this rule. Practically all heavy milk producers lose weight in the early part of their lactation period; that is, they produce milk at the expense of their body flesh. When such cows approach the end of their milking period they normally regain the flesh they have lost, and the farmer can well afford to feed them liberally, with the assurance that he will be repaid in the form of milk when the cows again freshen.

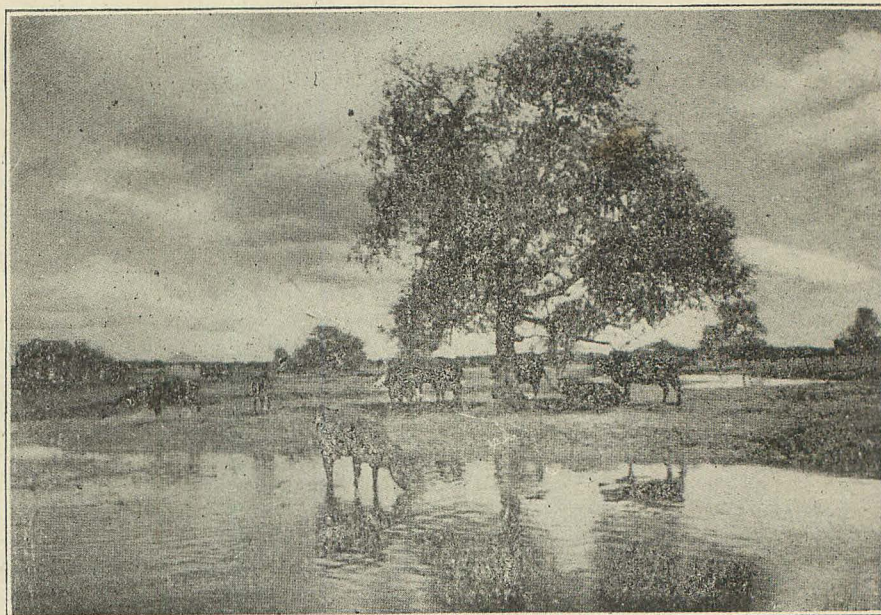
Pasture is the natural feed for cows, and for average conditions, with ample pasture of good grasses or legumes in good, succulent condition, good production can be secured.

that will provide such pastures frequently is high priced. The following tables show the cost of pasturing a cow on land ranging from \$25 to \$200 an acre:

Interest on cost of pasture per cow for the season; interest at 6 per cent on the value of the land, allowing from 1 to 4 acres per cow. (Table 1)

Cost of pasture per cow per day on basis of preceding table with a pasture season of 150 days. (Table 2)

Where the value of land is so high that the cost of pasturing is excessive, or where the land may be more profitably used for growing crops, other methods of summer feeding are more profitable. It is stated that in some



A Model Pasture

The cost of land is a factor in the economy of using pasture, however. If pastures are depended upon entirely for from four to six months of the year, and production is kept up to a profitable standard, anywhere from

sections for average production a cow can be fed on dry feed for 20 cents a day, and when the cost of pasturing exceeds that amount some other method of feeding should be considered.

**SAVING MONEY ON THE PRICE OF LAND.** In buying, is so much hard cash earned. Buying Aitkin County Land from our Company means great saving. Choice Dairy Lands. Literature for the asking. ARNOLD, Land Agent, 107 Wolvin Bldg., Duluth, Minn.

**PHOTO POCKET CUTLERY and Farm Implements.** Catalog free. EMIL BRISS COMPANY, Neenah, Wisconsin.

**Young Man,** would you accept a tailor-made suit just for showing it to your friends? Then write **Banner Tailoring Co., Dept. 411, Chicago,** and get beautiful samples, styles and a wonderful offer.

**WANTED:** To hear from owner of farm or unimproved land for sale. **O. K. Hawley, Baldwin, Wisconsin.**

**WANT TO BUY LAND?** Get in touch with our Company. Cut out the middleman. Maps. Prices. Literature. Arnold, Land Com'r, 509 Wolvin Bldg., Duluth, Minn.

**MISSOURI AUCTION SCHOOL**  
FREE CATALOG KANSAS CITY, MO.

**FOR SALE**

Virginia farm containing 137 acre, nine room dwelling and out-buildings. Good meadow, growing timber. Convenient to school, church and post-office. Quarter mile from boat landing and cannery. Price reasonable, terms to suit purchaser. **M. BOYD, Palenville, N. Y.**

TABLE NO. 1

Acres per cow	Value of land per acre				
	\$25	\$50	\$100	\$150	\$200
1	\$1.50	\$3.00	\$6.00	\$9.00	\$12.00
1½	2.25	4.50	9.00	13.50	18.00
2	3.00	6.00	12.00	18.00	24.00
2½	3.75	7.50	15.00	22.50	30.00
3	4.50	9.00	18.00	27.00	36.00
3½	5.25	10.50	21.00	31.50	42.00
4	6.00	12.00	24.00	36.00	48.00

1 to 4 acres or more must be provided for each cow, says the bulletin. This is assuming that a permanent pasture is of good, clean turf, with few or no waste places, or that a temporary pasture has a good stand of grass or legumes thruout. Land

Grain should be fed to heavy-producing cows under all pasture conditions, says the bulletin. The following table is furnished as a guide to feeding grain with an abundant pasture. Variations should be made to suit differ-



ent conditions and individual cows. (Table 3)

Grain fed to cows on pasture need not contain the same percentage of protein as for winter feeding. Pasture approximately balanced ration, the grain ration should have about the same proportion of protein to other nutrients. The following mixtures are suggested for supplementing pasture without other roughage:

TABLE NO. 2

Acres per cow	Value of land per acre				
	\$25	\$50	\$100	\$150	\$200
	Cents	Cents	Cents	Cents	Cents
1	1	2	4	6	8
1½	1½	3	6	9	12
2	2	4	8	12	16
2½	2½	5	10	15	20
3	3	6	12	18	24
3½	3½	7	14	21	28
4	4	8	16	24	32

Per cent digestible protein.....10.3

Mixture No. 1:

Ground oats.....100 pounds

Wheat bran.....100 pounds

Corn meal.....50 pounds

Per cent digestible protein.....12.7

Mixture No. 2:

Wheat bran.....100 pounds

Corn meal.....100 pounds

Cottonseed meal.....25 pounds

Per cent digestible protein.....15.5

quantity of roughage or if the cost of pasturing is excessive, the summer silo may be used to advantage. An acre of corn in the form of silage will provide succulent roughage for several cows for a season. During periods of drought, when both pastures and soiling crops fail, a silo filled with well-matured silage grown the previous year is most valuable.

In planning a summer silo, it should

be kept in mind that its diameter should be in relation to the number of cows fed daily. As a general rule, under summer conditions, a cow will consume about 20 pounds of silage. Silage enough must be removed daily to prevent excessive surface fermentation. On this basis, a summer silo for 20 cows should be 8 feet in diameter; for 30 cows, 10 feet; and for 40 cows, 12 feet. As 8 feet is about the mini-

TABLE NO. 3

Jersey Cow		Holstein-Friesian or Ayrshire Cow	
Daily milk production (pounds)	Pounds of Grain	Daily milk production (pounds)	Pounds of Grain
20.....	3	25.....	3
25.....	4	30.....	5
30.....	6	35.....	7
35.....	8	40.....	9
40.....	10	50.....	10

Mixture No. 3:

Corn-and-cob meal.....250 pounds

Cottonseed meal.....100 pounds

Per cent digestible protein.....13.6

Mixture No. 4:

Wheat bran.....100 pounds

Gluten feed.....50 pounds

Corn meal.....50 pounds

To carry cows over a period of short pasture without a falling off in milk, soiling crops are growing in favor. For this purpose second-growth red clover, alfalfa, oats, or peas, are excellent. Corn is also available in August and September. What may be a disadvantage in the use of soiling crops is the extra labor required to cut and haul these crops from day to day, especially if field work is pressing.

On high-priced land, where the problem is to produce a sufficient

mum diameter of a silo for best results, a summer silo is most applicable in herds of 20 or more cows.

### DRESSING PERCENTAGE

The average dressing percentage of hogs is 75 while of cattle it is 53 and of sheep 48. Part of this difference is due to the method of figuring. In the case of the hog the hide, head and feet are included in the carcass weight,

while in the case of cattle and sheep the head, hide and feet are not included. Then the hog is very thick fleshed and has a small digestive system. Cattle and sheep have large paunches and digestive systems. Sheep dress out lowest due to the wool and the rather light fleshing of the carcass.

The dressing percentage of animals of each class varies widely. This is due to the amount of flesh, especially fat present on the carcass and somewhat to the thickness of the hide and size of the heads and legs, and to the amount of fill or the amount of feed and water present in the digestive tract at the time of slaughtering. For the hogs the dressing percentage varies from 65 to 85% with an average of 75. For cattle it ranges from 48 to 70% with an average of 53 and for sheep from 44 to 56% with an average of 48%.

### Heating Milk for Calves

While the calves are young the milk should be heated to blood heat (90 degrees to 100 degrees F.). When 2 or 3 months of age calves will do well on cold milk, provided it is of the same temperature, or practically so, at each feeding. The important thing is that the milk be of the same temperature at each feeding. Dirty or old milk should not be given.

Sugar beets and mangels are dangerous feed for rams or wethers.

The manure heap is one part of the farm that is not benefited by drainage.

A check in the growth of a colt means something off value when he becomes a horse.

A healthy growing condition of the system is shown by a bright oily condition of the fleece.

### HOW PURE EXTRACTED HONEY IS PRODUCED

Eggers Apiaries Co., of Eau Claire, Wis., explains the process as follows: As soon as the bees have filled and sealed their combs they are removed, after removal they are uncapped and placed in a machine called an extractor which by centrifugal force throws out the honey and leaves the combs undamaged to be returned to the bees to be refilled.

## BECOME A VETERINARIAN

Veterinarians are needed in North Dakota. The Indiana Veterinary College has many graduates in and eligible to the United States Government Service. Completely equipped laboratories, biological and chemical. Operating rooms furnished with the latest appliances. Conducted by practical veterinarians who are stock men. A firmly established institution with all the facilities for giving a young man a complete education in veterinary science. For catalogue No. 837 and information write to

INDIANA VETERINARY COLLEGE, INDIANAPOLIS, INDIANA





## Poultry Department



### POULTRY TOPICS Michael K. Boyer

#### Broilers or Roasters, Which?

Some poultry farmers claim that they can make more money raising roasting fowls for market than they can with broilers. On the other hand there are poultrymen who say the profits are decidedly in favor of broilers. Much depends upon the markets. In some sections of the country broilers would have very little sale, while in other sections there is a great call for them. Where the market is favorable to roasting fowls, say four to six pounds in weight, it is more profitable to raise the latter, as the extra pounds in weight over the first two cost considerably less, on account of the gain being quickly made. Where it is possible both broilers and roasters should be raised, so as to fit all classes of trade.

#### Pullets for Profit

Pullets hatched in April and kept growing during the summer come into profit in the fall. They are the winter layers and by spring are in fine condition for breeding. There is more profit the first year in the eggs from pullets than there is in breeding them, as, under a year of age, there is not much stamina to impart to the young.

But the pullets must not be hatched too early. March hatched pullets of the American or Mediterranean Classes are apt to molt in the fall, with the old hens, and then will hardly begin laying before the hens do—sometimes in January. The fall laying pullets come into profit just about the time the old hens are molting, and thus prevent a shortage of the egg crop.

#### Can Success be Assured?

Poultry authorities are often called upon to answer the query: "Can I make a living?" Who can answer it? We can point to plants that make more than a living for the owner. At the same time, we admit there are many failures. But can this particular person make a living? That depends very much upon what he is composed of.

How much money have you? What experience have you? What personal weapons have you to war against stumbling blocks, dark days, discouragements, accidents and hosts of other troubles that do not come singly, but very often collectively in such a manner that only the strongest can

survive? Those are qualifications you must have to make poultry culture a successful exclusive affair.

Can success be assured in any business without a proper amount of capital to invest, and an equal amount to work upon until an income is created? There is no rubbing out the fact that there must be money on hand.

Can success be assured in any business without the proper experience? How ridiculous to presume that this business, above all others, would thrive in anybody's hands. We would not remain in such a vocation twenty-four hours. None but the best survive. We must first study and then practice. We must be an apprentice before we can be a journey-man.

Can success be assured to the man who is easily discouraged? To the man who is ever ready to quit at the first mishap? The man who gets the "blues," who is ever grumbling and complaining, is the man who is never successful. Everything he undertakes seems to drop.

Success, however, can be assured to the man who will begin at the bottom round of the ladder and gradually work his way to the top. Begin small, according to the amount of your capital and experience. Enlarge the plant as that capital and experience will permit. Stick to the work thru thick and thin, and always try to profit by every mistake you make. That's the kind of man that makes a success, and to him a living can be assured. Good, honest, hard working poultrymen, men who do not allow extravagance in their living, are always able to make a livelihood on a less amount of capital than can those who are prone to be reckless in their habits.

#### The Farmer and Poultry

No sooner does a man invest in thoroughbred fowls than his neighbors come to exchange eggs, or buy at the market price. They forget the cost of producing such stock. "A chicken is a chicken" with them. A pullet or yearling hen is dirt cheap at \$2 if she has pure blood in her veins. She will lay enough eggs the first year to more than pay for her cost and keeping. We are gradually stepping out of such foggyism, and the farmer is learning that well-kept hens will bring an income in winter when everything else on the farm is at a standstill.

But no farmer should go extensively into poultry culture, unless he is willing to give up all other work on the farm. Poultry as an adjunct is profitable, but the farmer should keep no more fowls than he can give good care. Fifty well-kept hens will give better returns than 100 neglected ones.

Allowing the stock to have one run in common, and all crowd together in the same house, or roost on the trees, or some other outdoor place, will never make poultry profitable. As much care must be taken with the hen as with the cow. Without this care chickens become a source of expense rather than one of profit. "What is worth doing at all is worth doing well," is an old maxim, but very applicable to the poultry business.

#### Higher Egg Records

About eight dozen eggs per annum is the average record of the United States hen at the present day. It should be larger; and it can be made larger just as soon as poultrymen will breed more for it.

Before me is the advertisement of a White Wyandotte breeder, who claims that pullets of his strain mature when five months old, are above standard weight, and have averaged 210 brown eggs per year. That's business.

Here is a sample of an advertisement of a Barred Plymouth Rock breeder:

"I have a very fine lot of Barred Plymouth Rock pullets and cockerels, bred from pedigreed egg layers. The males that sired them were hatched from eggs laid by hens that made a record of over 200 eggs each within a year of reaching maturity, and the eggs were a rich chocolate brown color."

Here is another: "Many of the pullets have begun to lay, and all are from stock bred primarily for egg-production. Have been reared in open

**White and Columbia Wyandottes,  
Light Brahmas, and S. C. White Leghorns**  
Over 30 years a breeder. Stock and eggs for sale. **MICHAEL K. BOYER, Box 27, Ham-  
monton, New Jersey.**

**Pure Bred Barred Rock Cockerels for sale.**  
Eggs from special pens. 15 for \$1.25.  
**A. CAMPBELL MCINTYRE, LAMOURE, N. D.**

## Quality White Rocks

Hatching Eggs and Stock in season. We have the Best. **O. A. Barton, Valley City, N. D.**

## BARRED P. ROCKS

Big, Strong, Prize-Winning Stock  
Hawkins, Bradley Strain  
Eggs and stock in season at very  
reasonable prices.

**PERCY BEALS**  
**BOX 736 : : FARGO, N. DAK**



fields, and are splendidly strong and healthy."

Now the point is this: if breeders of thoroughbred fowls will annually make up their best breeders, they will each year have hens with better egg records. Take, for instance, the first case cited—that of 210 eggs for White Wyandottes. That man shows careful annual selection, and the consequence is he has established a wonderful record for his stock.

#### "Starting in Business"

Here is a good story, as told by Judge G. O. Brown, of Maryland. This is the way, he claims, it was given him by 'Squire Slowgo':

"Deacon, do you remember the Colberts that lived back of Erway's blacksmith shop? Everybody knowed 'em, for they must surely was allus a barrowin' of things. You must surely remember 'em, Deacon?"

"Certainly, certainly; they were prompt to borrow, and slow to return things. The same did not like work any too well, either."

"That's right. Well, Bill, ther oldest son, got married, and yer will hardly believe it when I tell yer that he's in ther chicken business; and he has settled ther fact it costs less ter go into ther checken raisin' than any other business."

"Why, how is that, Slowgo?"

"Well, Deacon, Bill borred'd a setting hen of a nabor, an' a settin' of eggs of another—borred'd ther eggs ter make cake with. Told his nabor that they expected company, and their hens wasn't laying, but expected they soon would be. They hadn't been moved there long, an' there nabor wasn't onto his curves, as there sayin' is. Well, Bill gets off ther story to a nabor what had good White Wyandottes, and she lent him a dozen eggs. Bill set 'em, sez every egg hatched. He says he kept ther hen until she laid a dozen eggs, then returned her and returned the borred'd eggs. How's that, Deacon, for startin' of a poultry business with a small capital?"

"It was a slick game,—but just what one might expect from such people. How are they getting along?"

"Well, you'd hardly believe it, but they've got a regular fruit and poultry farm, an' everything has a wonderfully thrifty look. Bill said they had more'n 200 hens."

#### PRESERVING EGGS

Now is the time to preserve eggs. The water glass method worked out by Professor E. F. Ladd of the North Dakota Agricultural College is very simple. Eggs put up according to it will retain their original flavor.

Directions: The eggs must be fresh and clean. Washing an egg spoils its keeping qualities. Galvanized iron vessels, crocks, jars or wooden kegs may be used. The vessel must be clean. If of wood it must be thoroly scalded. Use a good grade of water glass. One like a heavy white jelly that flows like cold molasses. Use one quart of the water glass to 10 quarts of pure water that has been boiled. Pour into the vessel, when cool. Fresh eggs can be put into it from time to time until the jar is filled. There should be two inches of the solution above the eggs.

Keep the preserved eggs in a cool place as in a cellar. The eggs will contain some gas and so crack when boiled. This can be prevented by making a pin-hole in the blunt end of egg before boiling them.

#### POINTS IN CHICK-RAISING

Enoch J. Peterson, N. D. Exp. Sta.

During the hot summer months give the young chicks shade, as well as plenty of green food and fresh cool water.

The more range the growing stock get the better; it results in more vigor and better growth. It will also help to reduce the feed bill, as much feed can be secured from grasshoppers, worms and insects. For best results provide the young stock with a run by

themselves and they should not be placed in the same house as the old birds. The coops should be constructed so as to provide an abundance of fresh air during the warm nights.

Some foods upset the digestive system of chicks, very quickly. Hundreds of chicks are killed every year by feeding foods that are not in good condition.

Chicks will not make the best development unless they are free from lice. Fight the mites and lice vigorously during the hot months.

#### CAR LOAD LOTS

The carload is the unit in handling a great many things on the market as well as on the railroad. In planning the production it will often be advantageous to plan to have a carload of hogs or a carload of cattle or a carload of potatoes or whatever the product. In this way the lowest transportation charges are secured and the price secured is often better too than if a smaller quantity had been sold.

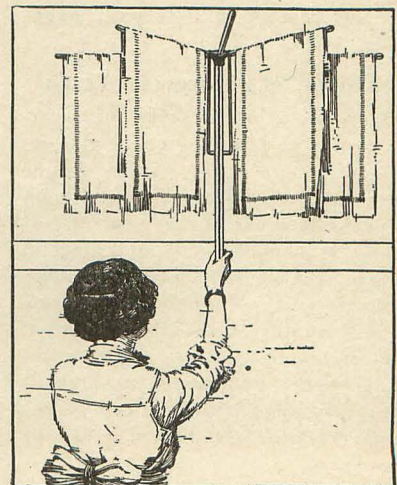
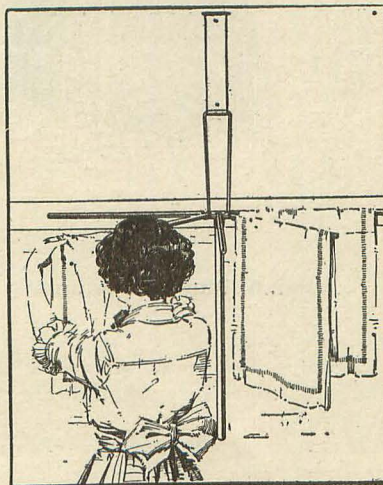
## ROOFING

GUARANTEED 50 STYLES 20 YEARS 60c Per Roll

As low as 60c per roll, new bargain catalogue samples to list all FREE. Direct from my 7 factories, at Pittsburg, Kas. City, St. Paul, San Francisco, Scranton, Cincinnati and Chicago.

**Emil Briss Co., Necedah, Wis.**

## Housewife's Premium



#### HI-LO CLOTHES DRYER

Send only \$1.00 and your subscription will be renewed for two years and Hi-Lo Dryer will be sent you, post paid. If you prefer, we will enter two names for one year each.

NORTH DAKOTA FARMER, : : : : LISBON, N. D.



## School and Home

### ODD AND UNUSUAL COSTUMES

The dainty cotton frock, varied by taffetas and a few gabardines and serges, predominates, and as many of the pretty costumes are worn by out-of-town visitors, one glimpses, now and then, something delightfully new and original. At the Ritz-Carlton the other day, for instance, a young miss wore a dark blue serge frock with a pin stripe of scarlet and yellow, arranged about an inch apart. Her hat and shoes, which had high French heels, were bright scarlet. The effect was striking but not unbecoming to one of her age.

An elderly woman with a quantity of soft white hair, sitting near by, wore a soft gray faille gown, with a large sailor-shaped hat of black hatters' plush. Hatters' plush, it is predicted, will be one of the popular materials for fall and winter hats. Net, in black and white, composed many of the dresses and there were also a goodly number of delicately colored organdies.

Sports suits, too, are often worn at the luncheon hour; that is, the soft, glove-silk coats in the favored bright colors, combined with skirts of pongee in the natural shade, or with white or the popular stripes, in vivid combinations. The daintiest of blouses are worn under these coats, of a pastel colored Georgette, batiste or a handkerchief linen.

### Popularity of Georgette Frocks

The white Russian frock of Georgette, with perhaps a touch of contrasting color on cuffs or collar, is one of the favored designs for afternoon and evening wear in the city. Georgette is delightfully cool and graceful and lends itself particularly well to the season's styles, both for daytime and for evening wear. It is one of the sheer materials which really washes and wears very well, making it practical for the modish transparent sleeve, the costume blouse and the dance dress.

For dance dresses, the printed Georgettes are youthful and pretty; some of these have printed borders, and plain white or colored grounds, and then again the softly tinted rose or conventionalized design is scattered over the material, on a ground of white, or stripes. It is most effective and satisfactory for many purposes.

### One-Piece Frocks

Altho many cling to the tailored suit with its contrasting blouse, even in the warmest weather, the one-piece dress is becoming more and more of a favorite. One of the most attractive of simple serges noticed recently, was made of two straight widths, belted in loosely with a belt of the material embroidered in a dark red soutache. The armholes were cut out deeply and bound. With this frock was worn a white Georgette underblouse with loose flowing sleeves, the lower edges bound with rose color; the wide collar



Russian Blouse Costume

was also bound with the rose. It was a charming little model because of its simplicity, and very youthful in its straight lines.

The heavy linens, too, are effective for street wear. Ivory white, French blue, the soft, pale grays, and cool looking greens are among the favored shades in these linens. Many of them are cut along the straight lines of the serges, being pleated often on to a shoulder yoke, and belted in loosely with a belt or sash of the same material as the frock. An especially pretty white linen on this order, was

made with a touch of black on the collar and sash.

The sash is quite smart just now on all types of dresses, from the simple serge to the afternoon taffeta or pongee. It is usually narrow, and made of the material of the dress, or of satin, when the frock is serge; generally a motif is embroidered on the ends, in colored beads or wool.

Many of these sashes cross in front and are knotted in the back, loosely and gracefully.

### Serge and Silk Combinations

Many of the favored silk frocks, noticed in the hotels, on the roofs, and in the shops, are combined effectively with a wool material, serge, gabardine or cloth. This is an idea which appeals to many and which is being used considerably in the ready-made garments. The lower portion of the skirt, the sleeveless jumper, wide cuffs and collar are generally made of the serge, and the body of the frock of the silk, taffeta, satin, or one of the Japanese silks, as the case may be.

### HINTS FOR YOUNG FARMERS

By Charles Cristadoro

#### The Wheat and Barley the Farmer Raises

**W**HEN it comes down to the staff of life "wheat is king." No cereal equals wheat for the making of bread, and every substance that can be imagined has been tried for bread, from the bark of the tree to the clay of the ground. Wheat leads all cereals for bread-making, because of its peculiar gluten content, not as to quantity, but as to bread-making quality, as possessed by no other cereal or legume. Barley, however, is richer in diastase. Wheat is not the cereal highest in protein content, oats and lentils far exceeding it, but neither of them will make well leavened bread, nor will barley.

There are many kinds of wheats and some of our best wheats today are credited up to accidents, as it were. Even the superb Durum wheats of our northwest, the richest in gluten and sugar of all wheats, imported as seed from the dry-lands of Russia fifteen or more years ago, are said, erroneously, to have come from the crop of a wild goose, far down from the frozen north, shot on the Dakota prairies. If there are any "goose wheat" farms up Labrador way or close up by the north pole, no explorer has ever reported same. Like every other plant wheat demands plant food and moisture.

As to plant food, fifty bushels of wheat will draw from the ground seventy pounds nitrogen; twelve

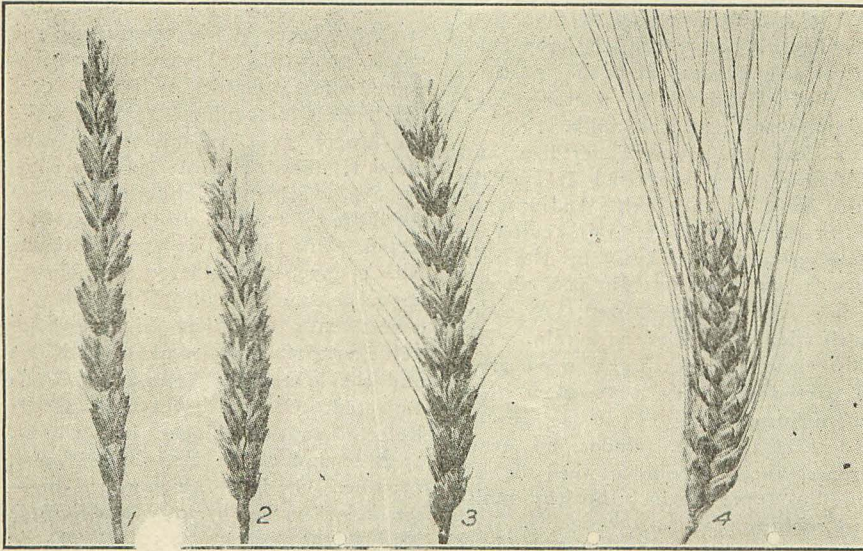


pounds phosphorus; and thirteen pounds potassium. The necessity of fertilizers on wheat land is therefore apparent. As to moisture, a bushel of wheat is calculated to remove from the ground 81,420 pounds, over forty tons of water. An off hand general rule is a bushel of wheat yielded for each inch of water in the ground.

growing grain seems insane, yet it is the best of practice. Just so much more moisture sealed into the ground.

We are gradually raising our average per acre but are yet far behind Europe. Were all our wheat dry-farmed and summer-fallowed, upon properly fertilized and rotated soil, we would far exceed the European yields. England's average for ten

of 35, 40, 50 even 60 bushels per acre of Turkey Red winter wheat, and 20 to 30 bushels per acre of spring Durum wheats, would seem to indicate that much of our future wheats will be grown west of the Rocky mountains. If in 25 or 30 years we are to have 200 instead of 100 millions of mouths to feed, we'll be obliged not only to extend our wheat acres but to increase our yields per acre as well.



HEADS OF HARD WHEATS OF THE UNITED STATES.

[1 (Fife) and 2 (Bluestem) hard spring wheat; 3 (Turkey or Kharkof) hard winter wheat; 4 (Kubanka) durum wheat.]

So whether it be wheat or barley, especially in a semi-arid country deep plowing should rule, followed by proper mulching. Summer fallowing is the economic course to follow, for it means in two years with one planting and one harvesting far more of a crop than could be raised by three successive yearly plowings, plantings and harvestings. The men who plant barley will learn this valuable lesson, in time. The new men who, under the Mandell act allowing 320 acres of semi-arid land to a government land holding will learn why the semi-arid farmer can take up 320 acres as against 160 of moist land; this act being designed to permit of this very summer fallowing, 160 acres fallen and 160 in crop. Barley, the same as wheat, demands moisture and when if wheat is up six or eight inches it pays to run the harrow over and break up the crust on the surface and dislodge any arros, it will pay for barley. It will pay when barley is up twelve or more inches to run the harrows thru again. The conserved moisture and the increase of yield will pay over and over again for the few stalks trampled. Barley and wheat are deep-rooted and the harrow teeth properly slanted and down but three inches or so will uproot but few plants if any at all. To run a harrow thru

years was 32 bushels; Germany 28, France 20, Austria 10 and the United States 14. Russia, with her 450 millions of bushels, averaged but nine bushels per acre, the Russian peasant being even a better wheat "miner" than the American farmer. The superior quality of dry-farmed wheat for bread making, coupled with the large summer-fallow yields

Col. Roosevelt is said to have stated that the most important issue before our people was soil fertility, the increase and upkeep of the producing power of the land. And when you realize that we are indebted to the farmer, who supplies us all of our bodily wants, from the bean we put into our mouths to the clothes on our backs, and the shoes on our feet, there certainly is something to soil fertility, more than the most of us imagine. To cultivate a farm and to "mine" a farm are two different propositions. We have two classes of farmers in the country today, the farmer-miner, and the intensive farmer. The former mines his farm as a miner does his mountain claim, taking everything out possible and replacing nothing. The latter, the real farmer, regards his soil as a bank account, an investment that must pay dividends, a mechanical plant or factory, and so he up-keeps the fertility from year to year, plows deeply; cultivates; rotates his crops; adds lime and fertilizers generally, all with a view of

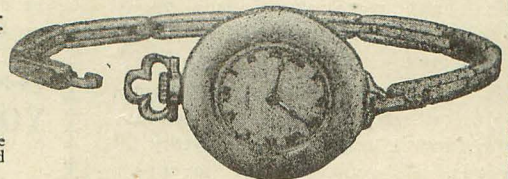
### Soil Fertility

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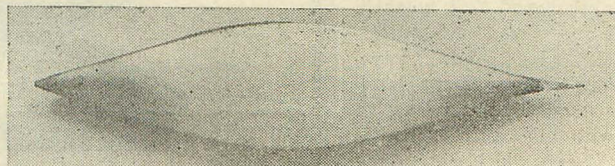
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making the land revenue-producing, yielding interest, increasing the crops as to quantity and quality.

One of the best examples of "farm-mining" was illustrated in connection with our northwestern prairies, when the plow was "drawn thru the bleak, humus-laden and nitrogen-charged soil, as fertile as one could desire, the idea of added fertility never entered the farmer's mind. And so he plowed and harrowed and sowed his wheat broadcast and the rich and moist land gave him thirty-five, forty perhaps, in some cases, fifty bushels of wheat to the acre. It was marvelous that virgin soil, without added fertilizer, should so yield. And again the next year the lauding and enthusiastic farmer plowed and harrowed and sowed and harvested in due course, but no thought was given to the mining of the plant food from the soil, going on and not even was the fertilizing and humus-supplying wheat-straw plowed back into the ground because of its fertilizing value and after harvest time, lit up the prairies for miles. The soil needed neither fertilizer nor humus, so the wheat miner agreed.

And this went on for years, and each year the unread and plainly written writing appeared upon the granary wall, in the form of an ever lessening crop. The fertility of the soil was becoming exhausted, the nitrogen grower was making itself felt by its absence in the yearly diminishing yield, until it is a fact that from a thirty-five, forty, or fifty bushel yield that came originally from the virgin prairie soil, the average yield, only three or four years ago, in a northwestern state, was four and one-half bushels of wheat to the acre! It costs \$12.00 to plant and harvest an acre of wheat, and wheat may bring 70 to 80 cents at the elevator. Easy red-ink figuring.

A library of hundreds of volumes could be written upon soil fertility alone, for it really is the history of nations. A depleted soil meant a ruined nation and so has it been from the beginning, and had the northwest not abandoned "all wheat" and gone over to diversified farming agricultural ruin would have resulted. As you give to your land in fertilizers so will it return to you. A farm will only automatically fertilize itself, partially so, thru crop rotation and the growing of nitrogen-implanting legumes.

Don't let your manure stand in pile unused for a year. Eighty tons of manure in pile will weigh up but fifty-three tons after twelve months

exposure, and the nitrogen and other elements will be sadly missing in those fifty-three tons left. Not much more valuable than humus.

Use a manure spreader and get the manure where it belongs on the farm and not left in the barnyard indefinitely. Read up on crop rotation, legumes, lime and fertilizers. If you are in doubt about your soil write to your farm agent. Know your farm and if you don't know it call in the farm agent to help you. Fertilize! The orchard, the crop field, the truck garden and the pasture. If well fertilized a pasture may mean 25 per cent more milk.

Neglect to properly fertilize and cultivate your farm and it quickly runs down at the heel. And instead of praying for more rain cultivate your ground and keep in the rain that is already there, if you plowed deeply and mulched well. A thoro cultivation is as good as a rain. The only excuse for letting a weed grow to partial maturity is to plow it in where humus is absent in the ground and hard to get. Under no other circumstances should a weed be allowed to even begin a healthy moisture-robbing growth.

It is not the use but the abuse of a good thing that hurts, and excessive use of irrigation water means a dilution and washing below root influence the invaluable plant food, and a tasteless product results. Nothing so well and plainly illustrates this as the growing of wheat. Irrigated wheat takes second place in the markets alongside of dry-farmed wheat. The irrigated wheat is starchy; the dry-farmed wheat is virile, full of gluten and preferred by millers as the best wheat. Dry-farmed wheat gets its plant food undiluted by super-irrigation. Water-soaked, swampy, air-excluding land never raised any decent crop. There is such a thing as too much ir-


rigation, and that cannot take the place of intelligent fertilization and save cultivation.

### FLOUR FROM DIFFERENT GRADES OF WHEAT

Baking tests have been made of the flour from the different kinds and grades of wheat at the North Dakota Experiment Station in cooperation with the United States Department of Agriculture. These tests cover the years 1907-1914. Flour from Blue-stem wheat, Grade Rejected, gave the highest loaf volume 2558 cc while the lowest, 2347 cc, was from Grade No. 1. The highest color value, 97.26%, was from Grade No. 3 and the lowest, 87.77%, from Grade Rejected. Of the Fife wheat, Grade No. 4 gave the highest loaf volume, 2650 cc and Grade Rejected the lowest 2190 cc. The highest color value, 97.61% was from Grade No. 1 and the lowest 90% was from Grade Rejected. Of the Velvet Chaff Grade Rejected gave the highest loaf volume, 2540 cc and Grade No. 1 the lowest, 2309 cc. Grade No. 2 gave the highest color value 97.70% and Grade No. 3, the lowest, 88.17%. Of the Durum the highest loaf volume was from Grade No. 4 2174 cc and the lowest from Grade No. 1, 2031 cc. Grade No. 4 gave the highest color value 92.33% and Grade No. 3, the lowest 89.50%. There was no Grade Rejected for the Durum.

All the flours were also analyzed for protein. The highest percentage for all the wheats was in Grade No. 3.

## CANCER



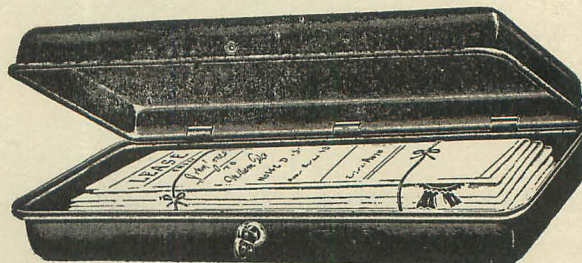
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## SCHOOL CREDIT FOR FARM TASKS

The idea that certain practical work done by boys and girls on the farm should count as credits in the agricultural courses of the rural elementary and high schools is growing rapidly in popularity among educators. The basis for this idea is the belief that the farm may and should become the logical laboratory for testing out and putting into practice much that is taught in the schools, and that the schools by giving credit for home work can and should encourage boys and girls to make profits for themselves or to become more directly helpful to their families. Educators, however, find some difficulty in defining just what work that the boy does on the farm should receive an educational credit and how many credits should be allotted for the different kinds of work which really help the boy to master progressive methods.

To assist the superintendents of schools and teachers, the specialists in Agricultural Education in the States Relations Service have recently published U. S. Department of Agriculture Bulletin 385, School Credit for Home Practice in Agriculture. This bulletin which may be had free by educators as long as the Department's supply lasts, devotes a number of pages to tables and examples showing the nature of school credit projects and the amount of credit to be granted. It is recognized, however, that real cooperation on the part of the parent is essential and the author thus defines the part the parent must play, in any plan for making school and farm work closer together in the interests of agricultural education:

The parent should agree: (1) To permit the pupil to use specified land, animals, and equipment, either as a temporary owner or as a tenant so far as the needs of the project are concerned; (2) to grant the pupil the time record; (3) to instruct the pupil in the necessary manipulation so far as practicable; (4) to allow the pupil the profits derived from his own labor and management. The last point is not always feasible, particularly where the pupil takes up one phase of the main business of the farm, such as the weighing and testing of milk.

The parent must at least give an unbiased voucher of the time and expense record, and a statement that the project work was all done by the pupil. In the absence of an advisory committee or an inspector, the parent is the judge as to when the pupil has accomplished a task successfully.

Where the pupil's time is much needed by the parent in regular home

duties it may be well to advise that the pupil take over some part of that home work as a project. This will insure the cooperation of the parents, altho the "managerial" income may not come to the pupil.

The school should not only give credit for work for which the pupil receives pay, but should consider the relative income or profit as one important factor in determining the school rank given on the project.

To insure success, it will be very desirable to have a memorandum of agreement signed by all parties before the project begins; a report in full from the pupil, and a voucher from the parent at the end.

## "WOMAN'S PLACE"—IN WAR TIME

The British Board of Censors recently passed a letter to an official of the British Government, now in the United States, containing a word picture of London in war time which vividly illustrates the wonderful way in which London women are helping to keep things going while their men are at the front. Here are some excerpts from the letter:

"The householder in the suburbs hears the postman's morning knock, and behold, the letters are delivered by a postwoman. The milk arrives; it is handed in at the door by a latiere up-to-date. The City man leaves his home after breakfast, boards a motor bus, and gives his penny to a high-booted, slouch-hatted lady conductor, who handles the bell punch as to the manner born; at the tube station he buys a paper of a bookstall girl; purchases his ticket of a female clerk; descends to the lower regions by grace of a lift girl, or is confronted at the barrier by an amazon, who clips his ticket coolly and regards him merely as a bifurcated nonentity. At his destination the ticket is collected by a uniformed sister, and on the way he has seen platoons of portresses with mops, buckets and brooms attending to rows of waiting trains.

## NO GAMES OF CHANCE

The management of the Grand Forks fair advanced ground in the matter of amusements on the grounds by deciding to issue no permits for games of chance of any description.

Games of chance are not always and altogether bad. When one buys a trivial prize for a trifling sum, doing it purely for the fun of the thing, nobody is injured. There is no gambling in such a transaction, for gambling implies the desire to win something of value for its own value. But the



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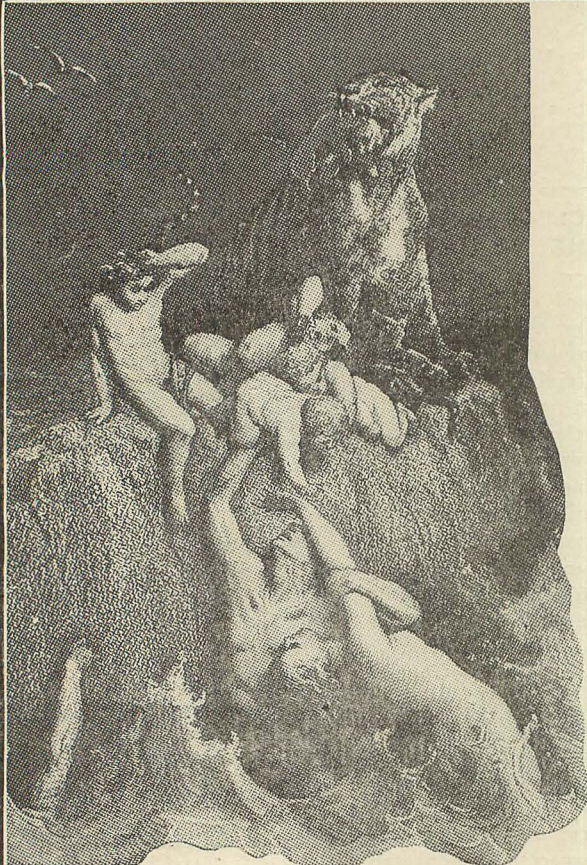
games of chance at fairs and other large public gathering, while harmless on the surface, and in many cases harmless all the way thru, afford opportunity for the evasion of the strictest regulations against actual gambling, and the fair management has done wisely in deciding to suppress them altogether.

It may be suggested in passing that

the evil in the gambling that is sometimes carried on at fairs is not chiefly in the fact that individuals lose more money than they can afford to lose, or that in the winning and losing that marks these games a real gambling habit is created or confirmed. Gambling is but one of a score of evils which belong in the same class, which thrive in the same atmosphere,

and which are practically inseparable. They cheapen and debase a public entertainment wherever they are found, and they detract even from the things of real value which are presented.

A good program can be given for the entertainment of live people without smearing it over with things for which we need to apologize.—Grand Forks Herald.



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## "The Chaldean Story of the Flood"

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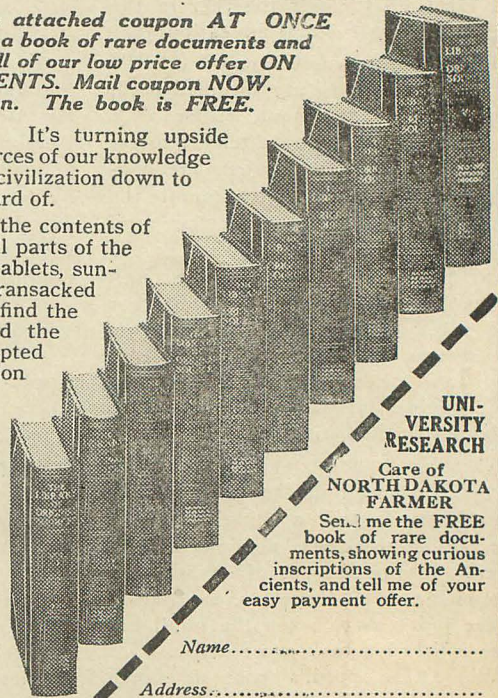
**DO YOU KNOW** that there has been dug up from the ruins of old Chaldea a complete story of the Flood—the same in every detail as Moses' account in Genesis—and that it was written thousands of years before his version appeared? Hardly one in a million has ever had an opportunity of seeing this startling story—HAVE YOU? But it is one of the many thousand curiously interesting accounts in

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## Seasonable Receipts

Mrs. Sadie Baird, Editor

### SOME EXCELLENT SANDWICH FILLINGS

Magdalene Hahn, Colorado Agricultural College, Fort Collins, Colo.

One of the most common questions asked by the housewife is, "Can you tell me a good sandwich filler?" Here are a few that have proved to be very satisfactory:

Meat thinly sliced or finely chopped and seasoned, or mixed with salad dressing.

Celery chopped fine and mixed with salad dressing.

Olives chopped fine and mixed with salad dressing (one-half c. to one-fourth c. olives).

Celery, pimientoes and nuts, chopped fine and mixed with salad dressing.

Cream cheese and nuts, or olives, or pimientoes and cream.

American cheese grated, seasoned with tomato.

Lettuce with mayonnaise.

Peanuts, pounded smooth, seasoned and moistened with cream.

Figs cooked to smooth paste, sugar, lemon juice and nuts added.

Dates and preserved ginger.

Dates and peanuts chopped fine, moistened with cream.

Raisins cooked to smooth paste, lemon juice and nuts added.

The bread should be 24 hours old and cut in thin, even slices. If fancy forms are desired, shape before spreading with butter. Cream the butter and spread evenly.

### Vegetable Sandwich

Spread bread with finely minced cucumber and mayonnaise, or put a lettuce leaf and mayonnaise between slices of buttered bread for good vegetable sandwiches.

### Sandwiches

Whip thick sweet cream, add sufficient grated cheese to make a stiff paste; spread on bread and sprinkle with finely minced celery, or season with celery salt.

### Sponge Cake

Four eggs, one cup of sugar, one cup of flour, one-half teaspoon of soda, one teaspoon of cream tartar. Plain cake or roll, and put in jelly.

### To Boil a Ham

First wash your ham well and then put it in a pan and cover with water all night; then drain it off and put it on the stove with fresh water and let it boil slowly for three hours or until the bone comes out; then leave it in the liquor all night. The next morning skin it and then put it in a large biscuit pan and coat it over with sugar and pepper; shove it in the oven until this cooks in the fat which will take five or ten minutes.

### Stuffed Tomato Salad

These are a form of salad. Select firm tomatoes of uniform size. Cut off the tops, scoop out the pulp and chop it with a little onion, celery and hard-boiled egg. Moisten with mayonnaise and refill the skins. Turn over more of the mayonnaise.

### Creamed Salt Mackerel

This is most acceptable on a hot morning. Soak the fish over night,

flesh side downward. Rinse well in the morning, boil up once in fresh cold water, drain and put on hot platter. Blend a tablespoon of butter with one of flour and add milk sufficient to make a thick cream.

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